# AIR CONDITIONING SYSTEMS

## Air-to-water Circulating Heat Pump Systems

# Service Manual

Service Manual

inventor

Your-conditions

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# PRODUCT

# PRODUCT INTRODUCTION

## 1 MODELS LIST

| Model | | Nominal Capacity(kW) | Power Supply (V, Ph, Hz) | Appearance |
|---|---|---|---|---|
| Refrigerant | Model Name | | | |
| R22 | DHW-C3.5/A1-K | 3.5 | 220-240V~50Hz | |
| | DHW-C5.0/A1-K | 5.0 | | |
| | DHW-C7.2/A1-K | 7.2 | | |
| R134a | DHW-C3.8/NbA-K | 3.8 | | |
| | DHW-C5.0/NbA-K | 5.0 | | |

| Model Name | Model volume (L) | Appearance |
|---|---|---|
| WT-SX150LC/B1-K | 150 | |
| WT-SX 200LC/B1-K | 200 | |
| WT-SX 250LC/B1-K | 250 | |
| WT-SX 300LC/B1-K | 300 | |
| WT-SX 350LC/B1-K | 350 | |
| WT-SX 400LC/B1-K | 400 | |
| WT-150LC-K | 150 | |
| WT-200LC-K | 200 | |
| WT-250LC-K | 250 | |
| WT-300LC-K | 300 | |

## 2 NOMENCLATURE

| DHW | - | C | 3.5 | / | | A1 | - | K |
|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | 3 | | 4 | 5 | | 6 |

| NO. | Description | Options |
|---|---|---|
| 1 | INVENTOR Heat Pump Water Heater | DHW |
| 2 | Heating style | S= Static ,C =Circulating |
| 3 | Heating Capacity | 3.5KW |
| 4 | Refrigerant | Nb=R134a, Default=R22 |
| 5 | Design Serial Number | A1 |
| 6 | Power style | 220~240V-1Ph-50Hz |

| WT-SX | □ | D | 250 | L | C | □ | / | B1 | - | K |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 8 | | 9 |

| NO. | Description | Options |
|---|---|---|
| 1 | Symbol of heat pump water tank | WT |
| 2 | Tank type | Lack-common heat pump water tank; V- heat pump water tank for multi VRF system |
| 3 | Function code | Lack-no electric heating function; D- electric heating function available |
| 4 | Nominal water tank volume | 100=100L 150=150L 200=200L |
| 5 | Structure type | B-Wall Mounted Type；L-Floor Standing Type |
| 6 | Bearing | Lack-non-bearing water tank; C-bearing water tank |
| 7 | Type of heat exchange tube | Lack-no heat exchanger; J-inner coil static heating(J-single coil; J2-double coils); JW-outer coil static heating; D-heating coil with floor (D-single coil; D2-double coils) |
| 8 | Serial number | A、B、C…… |
| 9 | Power | 220~240V-1Ph-50Hz |

## 3 FUNCTION

| Function | Description |
|---|---|
| Efficient and energy saving | The unit is automatically adjusted by electronic expansion valve.<br>COP is 3-5. Running cost is 1/4 of that of electric water heater, 1/3 of that of gas water heater and 1/2 of that of fuel water heater. |
| Safe and environmental friendly | There is no need of any electric heating or complete separation between water and electricity to avoid possible electric shock. Without possible toxicities of CO, user's safety can be ensured. |
| Reliable and | Adopting special compressor, the unit is resistant to high temp and pressure. The |

| | |
|---|---|
| durable | water tank adopts advanced stainless steel inner container with ultra-long dual magnesium sticks to ensure long lifespan of the system. |
| Easy installation | Without limitation of environment, the unit can be installed in kitchen, bathroom, balcony, garage, stock room or basement. It is also suitable for skyscrapers, villa, and so on. |
| Easy operation | Water temperature can be set. Water supply can be on or off depending on water temperature and water volume, so that hot water can be supplied at any time. Unit on/off can be set by user according to requirements (the unit will stop once water temperature reaches the setting point). Running of unit in electric platykurtosis is possible to reduce cost. |
| Intelligent defrosting | The unit with anti-freezing and intelligent defrosting functions can efficiently prevent freezing and frosting. |
| All-day use | The unit can make and supply hot water all day in despite of night, overcast and rainy days. |

# 4 PRODUCT DATA

4.1 Product Data at Rated Condition

| Models | | | DHW-C3.5/A1-K | DHW-C5.0/A1-K | DHW-C7.2/A1-K |
|---|---|---|---|---|---|
| Nominal Capacity | Heating | kW | 3.5 | 5.0 | 7.2 |
| | | Btu/h | 11942 | 17060 | 24566 |
| Power Consumption | Heating | kW | 0.9 | 1.15 | 1.75 |
| Power Supply | | | 220-240V ~1Ph~50Hz | | |
| Safeties | | | High/Low pressure switch, compressor thermal protection, overcurrent protection, lack of phase/anti-phase protection, antifreezing protection, R22 | | |
| Refrigerant | Type | | R22 | | |
| | Charge | kg | 0.65 | 1.0 | 1.0 |
| Compressor | Type | | Rotary | | |
| | NO. | | 1 | 1 | 1 |
| Condenser | Heat Exchanger | | Tube-in-tube | | |
| | Water In/Out Pipe Diameter | Inch | 3/4 | 3/4 | 3/4 |
| Evaporator | Heat Exchanger | | Fin type heat exchanger | | |
| | Fan Motor Power Input | W | 30 | 30 | 48 |
| Unit / Packing Dimension | Height | mm | 750/800 | 750/800 | 882/930 |
| | Width | mm | 762/878 | 762/878 | 870/994 |
| | Depth | mm | 256/360 | 256/360 | 378/428 |
| Net/Gross Weights | | kg | 50/56 | 55/61 | 68/79 |

| Models | | | DHW-C3.8/NbA-K | DHW-C5.0/ NbA-K |
|---|---|---|---|---|
| Nominal Capacity | Heating | kW | 3.8 | 5.0 |
| | | Btu/h | 12966 | 17060 |
| Power Consumption | Heating | kW | 1.02 | 1.35 |
| Power Supply | | | 220-240V ~1Ph~50Hz | |
| Safeties | | | High/Low pressure switch, compressor thermal protection, overcurrent protection, lack of phase/anti-phase protection, antifreezing protection, R134a | |
| Refrigerant | Type | | R134a | |
| | Charge | kg | 0.7 | 0.95 |
| Compressor | Type | | Rotary | |
| | NO. | | 1 | 1 |
| Condenser | Heat Exchanger | | Tube-in-tube | |
| | Water In/Out Pipe Diameter | Inch | 3/4 | 3/4 |
| Evaporator | Heat Exchanger | | Fin type heat exchanger | |
| | Fan Motor Power Input | W | 30 | 30 |
| Unit / Packing Dimension | Height | mm | 750/800 | 750/800 |
| | Width | mm | 762/878 | 762/878 |
| | Depth | mm | 256/360 | 256/360 |
| Net/Gross Weights | | kg | 55/61 | 60/66 |

**Note:1Ton =12000Btu/h = 3.517kW**

| Water tank model | | WT-SX150LC/B1-K | WT-SX200LC/B1-K | WT-SX250LC/B1-K | WT-SX300LC/B1-K | WT-SX350LC/B1-K | WT-SX400LC/B1-K |
|---|---|---|---|---|---|---|---|
| Capacity | L | 150 | 200 | 250 | 300 | 350 | 400 |
| Outline dimension（OD×H） | mm | Φ520×1350 | Φ540×1595 | Φ540×1945 | Φ620×1620 | Φ620×1895 | Φ620×2125 |
| Package (W*D*H) | mm | 1375×610×605 | 1620×630×625 | 1970×630×625 | 1645×710×705 | 1920×710×705 | 2150×710×705 |
| Net weight | kg | 42 | 55 | 66 | 69 | 77 | 84 |
| Gross weight | kg | 50 | 63 | 75 | 79 | 88 | 96 |
| Dimension of connecting pipe between main unit and water tank | mm | DN20 | DN20 | DN20 | DN20 | DN20 | DN20 |
| Connecting dimension of water pipe terminal | mm | DN15 | DN15 | DN15 | DN15 | DN15 | DN15 |

| Water tank model | | WT-150LC-K | WT-200LC-K | WT-250LC-K | WT-300LC-K |
|---|---|---|---|---|---|
| Capacity | L | 150 | 200 | 250 | 300 |
| Outline dimension（OD×H） | mm | Φ520×1350 | Φ540×1595 | Φ540×1945 | Φ620×1620 |
| Package (W*D*H) | mm | 1375×610×605 | 1620×630×625 | 1970×630×625 | 1645×710×705 |
| Net weight | kg | 45 | 57 | 68 | 71 |
| Gross weight | kg | 52 | 66 | 77 | 81 |
| Dimension of connecting pipe between main unit and water tank | mm | DN20 | DN20 | DN20 | DN20 |
| Connecting dimension of water pipe terminal | mm | DN15 | DN15 | DN15 | DN15 |

(1) Test conditions of the above data: outdoor ambient temp: 20℃DB/15℃WB, water tank initial/ ending temp: 15℃/55℃

(2) If there is any change of product specification, please refer to the nameplate.

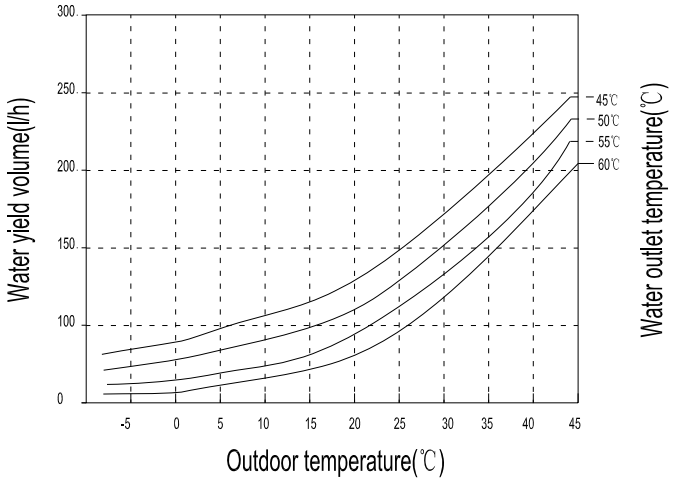
4.2 Operation Range

| Model | Range of Outdoor Temperature℃（℉） |
|---|---|
| Heating | -7~45℃ |

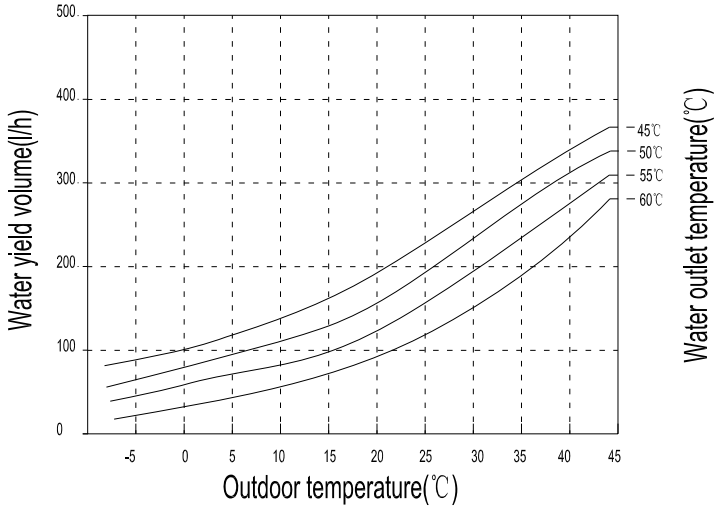
## 4.3 Operation Performance

During heating, the water is heated by the unit absorbing heat energy from outside and then releasing it to the water in water tank. Heating capacity may be reduced if outdoor temperature is decreased. The following chart is for reference.

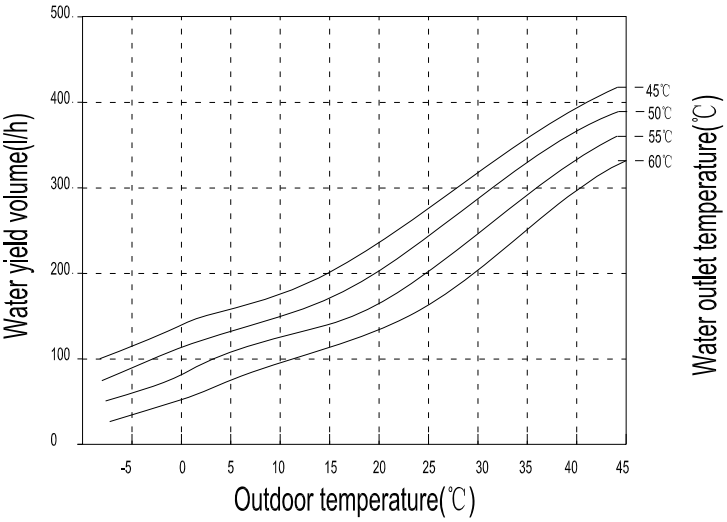
DHW-C3.5/A1-K Water Yield Capacity Correction



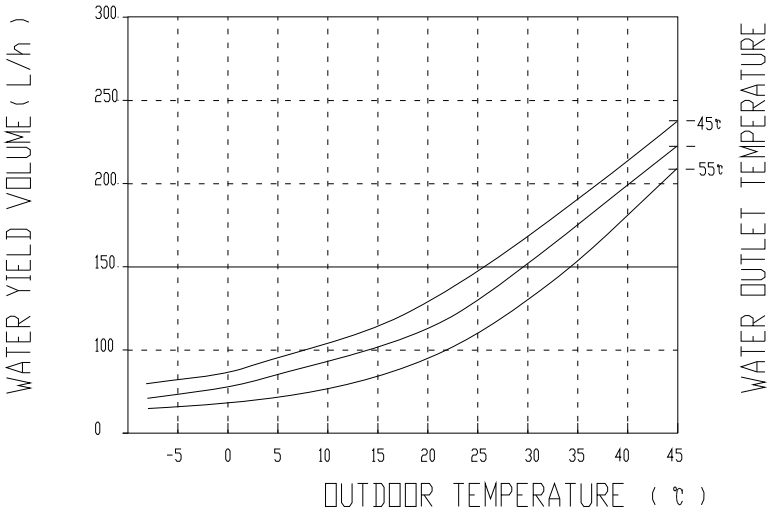
DHW-C5.0/A1-K Water Yield Capacity Correction



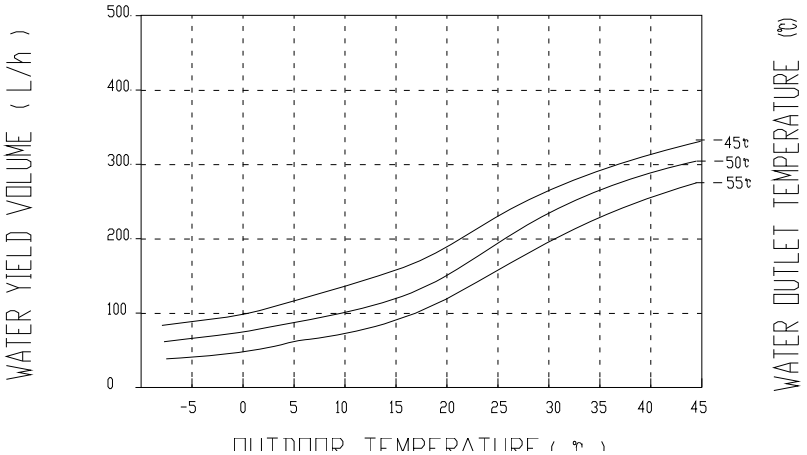

DHW-C7.2/A1-K Water Yield Capacity Correction



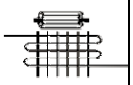
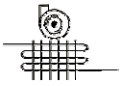

DHW-C3.8/NbA-K Water Yield Capacity Correction

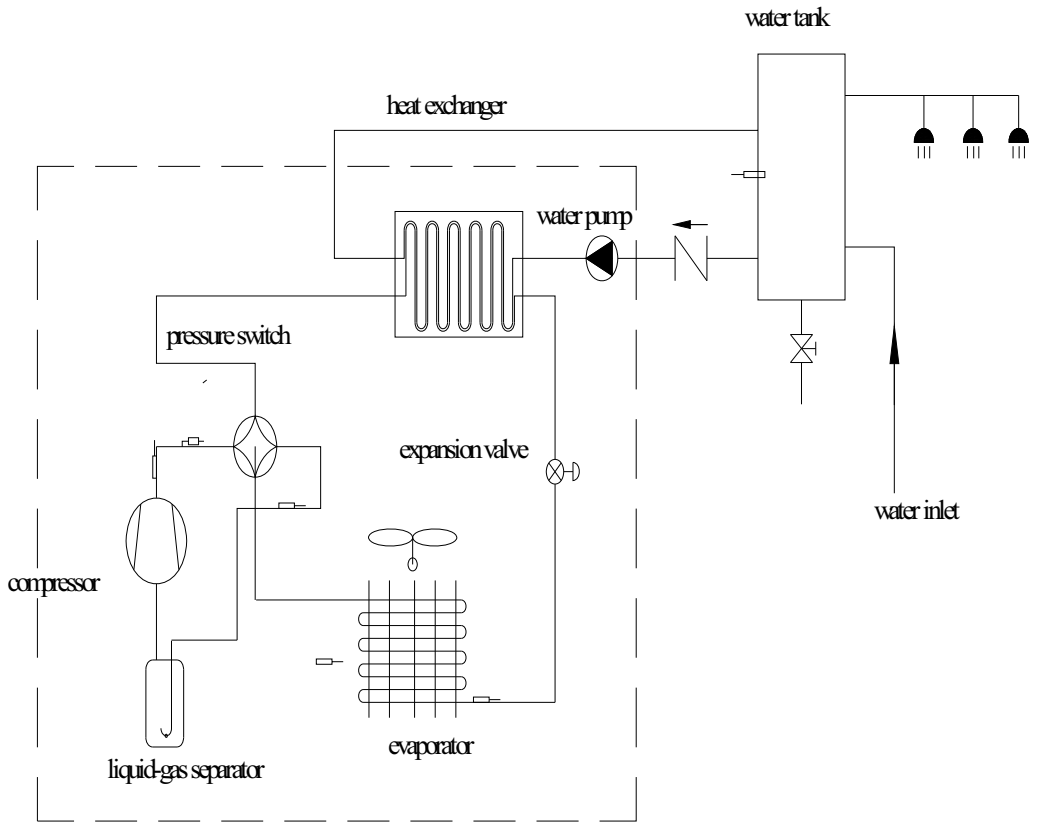


DHW-C5.0/NbA-K Water Yield Capacity Correction




## 5 PIPING DIAGRAM

| Name | compressor | 4-way valve | Stop Valve | Check Valve | Capillary | Filter | Electronic Expansion Valve |
|---|---|---|---|---|---|---|---|
| Sign | | |  | | | | |
| Name | Temperature Sensor | Pressure Switch | Heat Exchanger with Axial Flow Fan | Heat Exchange with Cross Flow Blower | Heat Exchanger with Centrifugal Fan | Thermal Expansio n Valve | Gas Liquid Separator |
| Sign | | | |  |  | | |

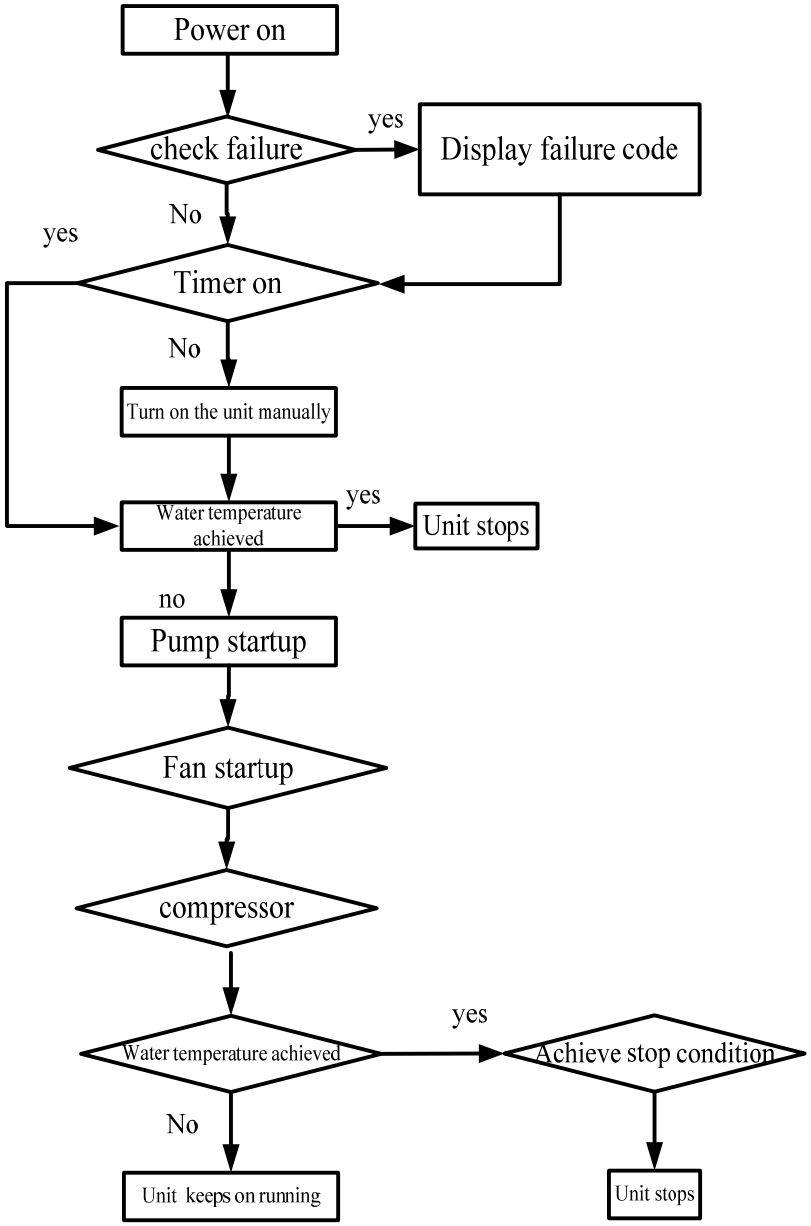



The energy-saving water heater makes use of heat pump. Through thermal circulation, it absorbs heat from the surroundings (air source). Via the compressor, the heat is sent to the condenser and released to the water in water tank. The principle is the same as that of heat pump air conditioner, except that the heat pump air conditioner absorbs heat from the environment and supplies heat to the indoor air, while the energy-saving water heater heats the water with this heat. Its COP is 3 times higher than that of the traditional electric water heater. It is an efficient, energy-saving, and environmental friendly product.

# CONTROL

# UNITS CONTROL

## 1 OPERATION FLOWCHART



# 2 MAIN LOGIC

## 2.1 Heating Mode

When press ON button, if the temperature of water tank meets the heating requirements, the outdoor fan will start running. The compressor will run after 15s.

If the temperature of water tank is above the set temperature, the unit will stop, and all loads will terminate. The outdoor fans will stop after 15s.

## 2.2 Defrosting Mode

### Condition of defrosting:

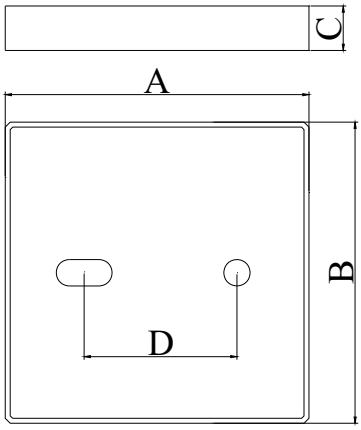
In heating mode, if the accumulative running time of compressor is beyond the set interval time of defrosting （default 45min），and the defrosting temperature is lower than the set starting temperature(default -4℃), the unit will start defrosting. In that case, the 4-way valve will shut off and the outdoor fan will stop after 2s.

### Condition of stopping defrosting:

In defrosting mode, if the continual defrosting time is beyond the set continual time of defrosting （default 8min），and the defrosting temperature is beyond the set stopping temperature, the unit will restart heating. In that case, the 4-way valve will be open and the outdoor fan will run.

# 3 WIRED REMOTE CONTROLLER

## 3.1 Dimension

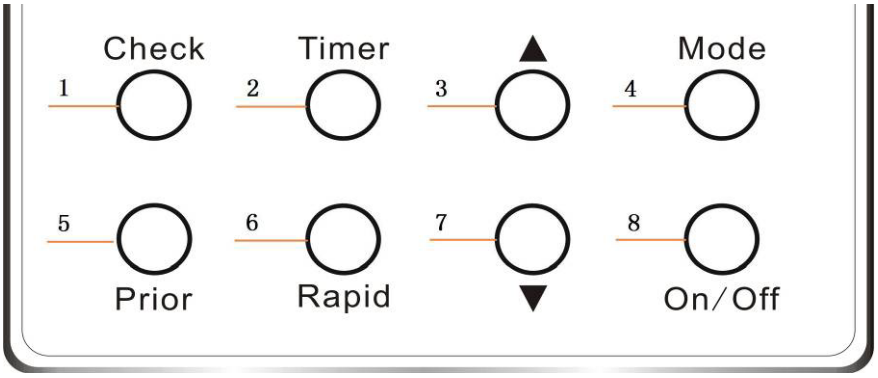



| A | B | C | D |
|---|---|---|---|
| 900 | 900 | 240 | 600 |

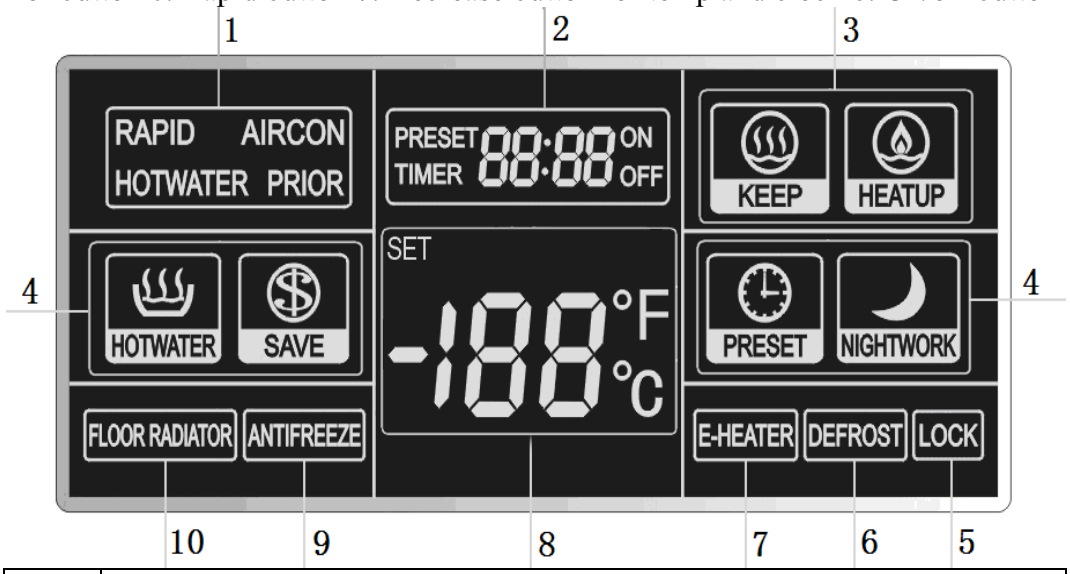
## 3.2 Function

### 3.2.1 Operation View

Functions and Wired Controller




1. Check button 2. Timer button 3. Increase button for temp and clock 4. Mode button
5. Prior button 6. Rapid button 7. Decrease button for temp and clock 8. On/off button




| NO. | Function description |
|---|---|
| 1 | Display of rapid hot water, hot water prior, air conditioning prior |
| 2 | Display of system time, timer, preset timer and running parameters |
| 3 | Icons display of heating up and standby for keeping the same temperature |
| 4 | .Display of hot water, save, preset and nightwork mode |
| 5 | Display of lock |
| 6 | Display of defrosting |
| 7 | Display of E-heater on |
| 8 | Display of actual water temperature, setting water temperature, error code and running parameters |
| 9 | Display of antifreezing function |
| 10 | Display of floor radiator on (this unit hasn't this function) |

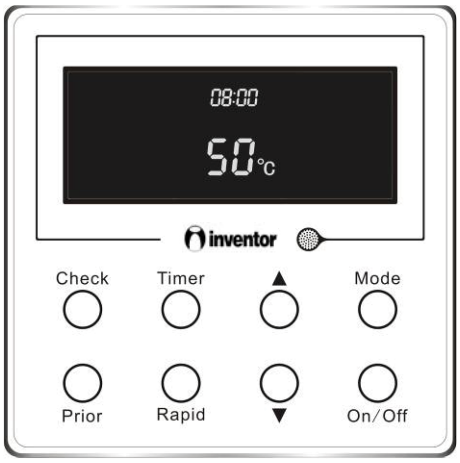
## 3.2.2 Display View

Instruction to Functions and Operation of Wired Controller

⚠ Notice:

If there is not any button operation for 15s, the wired controller will be half light. In that case, the wired controller can be normally operated only by pressing any button to make it light.

3.2.2.1 On/off

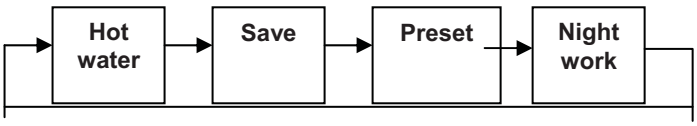



Press On/Off button to turn on the water heater. Repress it to turn off the water heater

Note: After energization and under normal communication, the LCD will display water temperature and time both under on and off states of the unit. It suggests off state if the LCD does not display running mode.

3.2.2.2 Mode Setting

Under on state of unit, press Mode button to switch the running modes as the following sequence:



As shown in the right figure, it is in Hot water mode with rapid button pressed.

Hot water mode: according to present water temperature, water heater immediately starts up or stops heating.

Save mode: Upper limit of setting temperature is 50℃. Other functions are the same as they are in hot water mode.

Preset mode: Preset time of hot water. The water heater will decide advance startup time of unit according to the ambient temperature and then decide startup and stop of compressor according to the difference between actual water temperature and setting water temperature. It will stop 1h after preset time. Once set, it will run circularly every day.

Nightwork mode: Fix preset time of hot water to 00：00 to 06：00 so that the water heater starts up

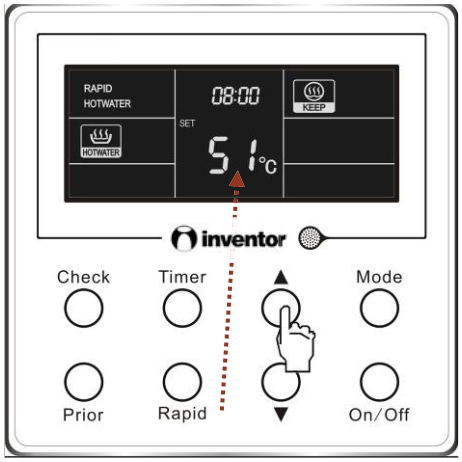
during this period and decides startup and stop of compressor according to the difference between actual water temperature and setting water temperature. Once set, it will run circularly every day.

3.2.2.3 Temperature Setting

Press ▲/▼ to increase or decrease setting water temperature. When long press it, the temperature will increase or decrease by 1℃ per 0.5 second.

Water temperature setting range: 35℃～58℃ (50℃ under save mode)

As shown in the right figure.




3.2.2.4 Timer Setting

(1)Timer On/Off Setting

In Hot water or Save mode, press Timer to set timer on/off.

Timer setting: Press “Timer” button and LCD will display Timer XX: XX on (under on state of unit, Timer XX: XX off is displayed), with numbers of hour flashing. In that case, press ▲/▼ to adjust the hours. Repress Timer button and numbers of minute will flash. In this case, press ▲/▼ to adjust minute. At last, repress Timer to complete timer setting.

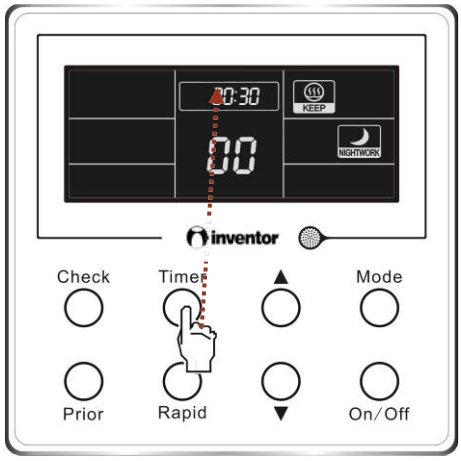
Cancel Timer: After timer setting, press Timer. In that case, LCD won’t display timer, and timer is cancelled.

Timer range: 00：00 ～ 23：59. Every press of ▲ or ▼ will increase or decrease the time of timer by 1 h or 1 min. Long press either of them, and the time of timer will automatically increase or decrease by 1 h or 1 min per 0.5 second.

(2) Preset Time Setting

In preset mode, the present preset time will start automatically. Press Timer to preset time.

Preset time setting: Press Timer button, and the LCD displays “Preset xx: xx” and numbers of hour will flash. In this case, press ▲/▼ to adjust hour. Repress Timer button, and numbers of minute will flash. In this case, press ▲/▼ to adjust minute. At last, repress Timer to complete preset time setting.




Preset time range: 00：00 ～ 23：59. Every press of ▲ or ▼ will increase or decrease preset time by 1 h or 1 min. Long press either of them, and then preset time will automatically increase or decrease by 1 h or 1 min per 0.5 second.

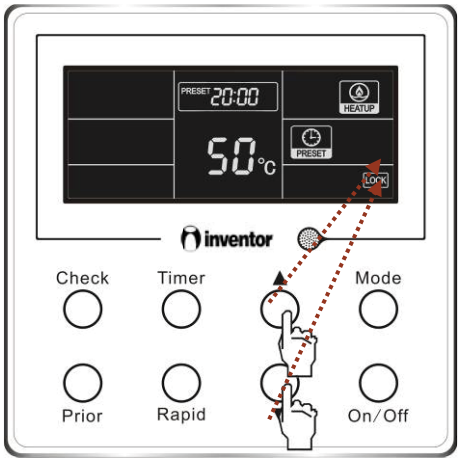
Preset mode is circularly startup. Water heater will heat water according to preset time every day and advance time corresponding with ambient temperature and then stop heating 1 h after preset time.

（3）System Time Setting

Press check button and defaulted check code 00 will be displayed in water temperature displaying area.

Under check state and when check codes are 00, press Timer button to set system time.

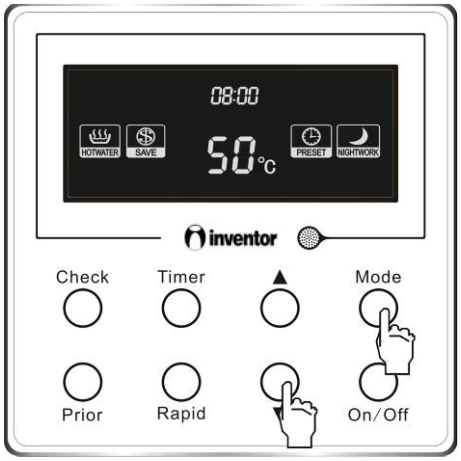
In this case, the LCD displays “xx: xx” and numbers of hour will flash. Press ▲/▼ to adjust hou. Repress timer button, and numbers of min will flash. In this case, press ▲/▼ to adjust min. If system time is not needed, press check button to quit or let it quit automatically after 15s without any operation. Repress timer button to confirm time setting and the time won’t flash any more.




Range system time: 00：00 ～ 23：59. Every press of ▲ or ▼ will increase or decrease setting time by 1 h or 1 min. Long press either of them, and then system time will automatically increase or decrease by 1 h or 1 min per 0.5 second, as shown in the right figure.

3.2.2.5 Special Functions

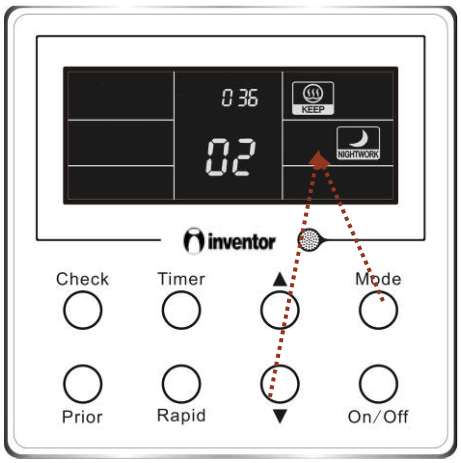
(1) Lock Function




Press ▲and ▼ at the same time for 5s, the wired controller will display lock icon. In that case, buttons of wired controller are invalid and lock icon will flash if operating any button. Repress ▲ and ▼ at the same time for 5s, and the lock icon will disappear and functions of wired controller will resume.

If malfunction occurs, lock function will be invalid for a while. Once it is released, lock state will resume. Lock state will be memorized upon power failure.

（2）Cleaning Function




During stop of unit without malfunction, press Mode and ▼ at the same time for 5s, and the wired controller will enter into cleaning state. LCD will circularly display Hot Water, Save, Preset and Nightwork (refer to the right figure). Repress Mode and ▼ at the same time for 5s to quit.

Cleaning function can maintain max 30 min. After startup, On/Off button is shielded. Once malfunction occurs, cleaning function will automatically quit.

（3）Parameters Check

This function is usually for debugging personnel.

When press check button into checking state, checking code flashes and corresponding parameters are displayed in clock displaying area. Press ▲ and ▼ to switch among code.

3.2.2.6 Malfunction Display

If malfunctions occur during operation of system, temperature displaying area will display error codes.

When malfunction occurs， wired controller shields all functions except On/off and checking functions .The outdoor unit is off.

If multiple malfunctions occur at the same time, error codes will be displayed in cycle.

If wired controller displays malfunction, please turn off the unit and ask professionals for help.

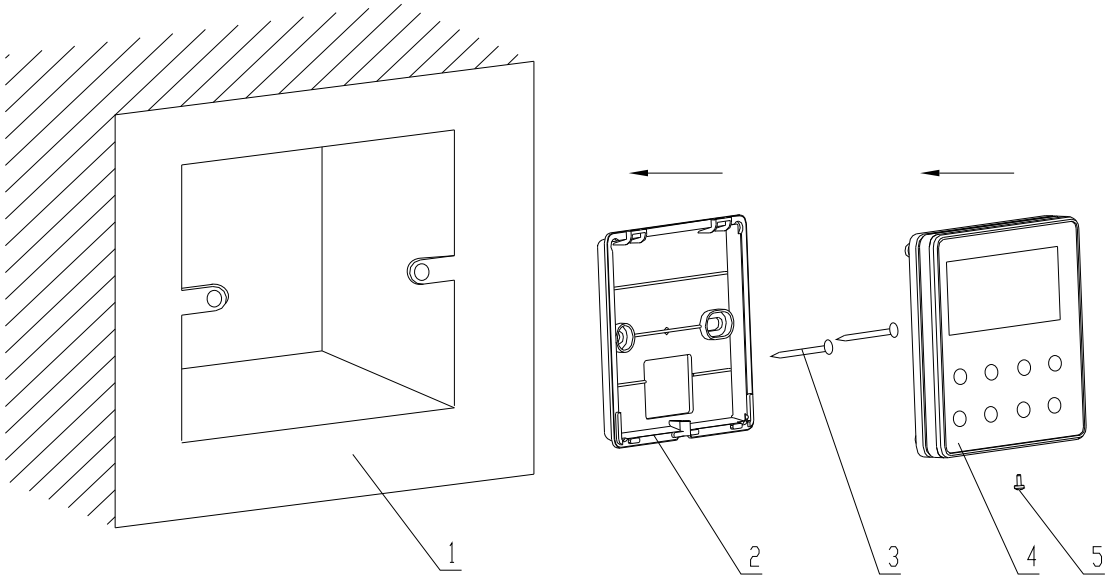
Refer to error codes in the last page for reference.

## 3.3 Installation

**Installation Location of Wired Controller**

1. Never install wired controller in wet place or under sunlight directly.
2. Never install the unit and wired controller in the place where there is electromagnetic interference.
3. Make sure communication line is connected to correct port to avoid communication malfunction.

**Installation of Wired Controller and Project Debugging**




| No. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Description | Socket’s base box installed in the wall | Soleplate of controller | Screw M4X25 | Front panel of controller | Screw ST2.2X6.5 |

Pay attention to the following items during installation of wired controller:

1. Cut off power supply of heavy-current wire embedded in mounting hole in the wall before installation. It is prohibited to perform the whole procedure with electricity.
2. Pull out 4-core twisted pair line in mounting hole and then make it through the rectangle hole at the back of controller’s soleplate.
3. Join the controller’s soleplate on wall face and then fix it in mounting hole with screws M4X25.
4. At last, insert the 4-core twisted pair through rectangle hole into controller’s slot and buckle the front panel and soleplate of controller together.

⚠ Caution:

During connection of wirings, pay special attention to the following items to avoid interference of electromagnetism to unit and even failure of it.

1. To ensure normal communication of unit, signal line and wiring (communication) of wired controller should separate from power cord and indoor/outdoor connection lines. The distance between them should be kept 20cm in min.

2. If the unit is installed at the place where there is interference of electromagnetism, signal line and wiring (communication) of wired controller must be shielding twisted pair lines.

# INSTALLATION

# INSTALLATION

## 1 UNITS INSTALL

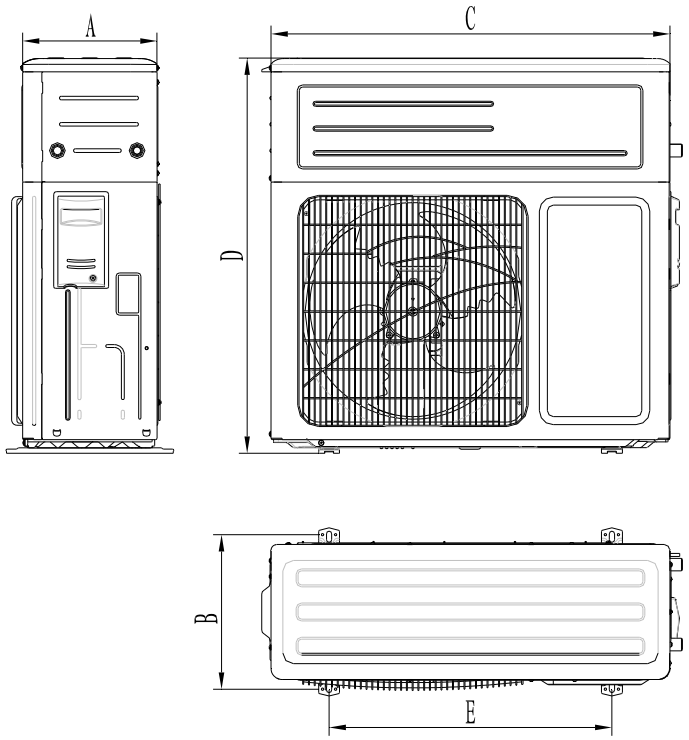
### 1.1 Installation Positions

For outdoor unit:
The installation is frost-free.
The space around the unit is adequate for servicing.
The space around the unit allows for sufficient air circulation.
There is no danger of fire due to leakage of flammable gas.
All piping lengths and distances have been taken into consideration.

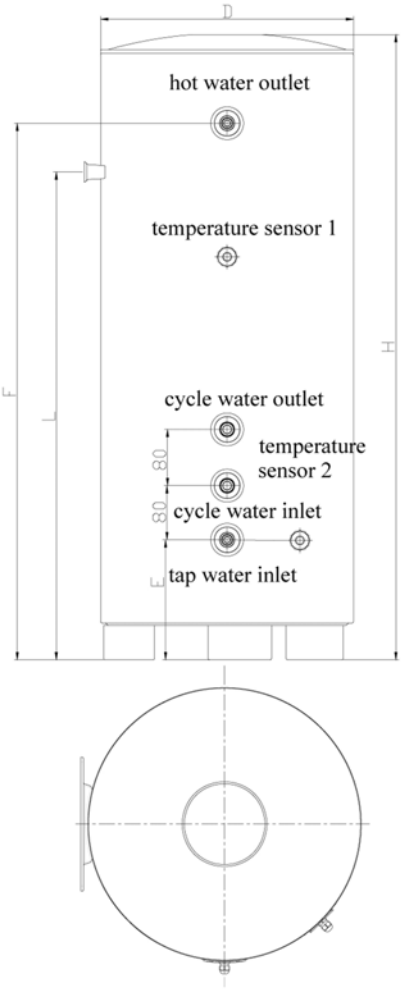
### 1.2 Matters need Attention

At delivery, the unit should be checked and any damage should be reported immediately to the carrier claims agent.

### 1.3 Dimension Data




| Model | A | B | C | D | E |
|---|---|---|---|---|---|
| DHW-C3.5/A1-K | 256 | 320 | 762 | 750 | 540 |
| DHW-C5.0/A1-K | 256 | 320 | 762 | 750 | 540 |
| DHW-C7.2/A1-K | 305 | 378 | 870 | 882 | 549 |
| DHW-C3.8/NbA-K | 256 | 320 | 762 | 750 | 540 |
| DHW-C5.0/NbA-K | 256 | 320 | 762 | 750 | 540 |






| model | D | H | L | F | E |
|---|---|---|---|---|---|
| WT-SX150LC/B1-K | 520 | 1350 | 863 | 1123 | 278 |
| WT-SX200LC/B1-K | 540 | 1595 | 1200 | 1358 | 278 |
| WT-SX250LC/B1-K | 540 | 1945 | 1500 | 1700 | 278 |
| WT-SX300LC/B1-K | 620 | 1620 | 1150 | 1366 | 286 |
| WT-SX350LC/B1-K | 620 | 1895 | 1400 | 1671 | 286 |
| WT-SX400LC/B1-K | 620 | 2125 | 1600 | 1877 | 286 |
| WT-150LC-K | 520 | 1350 | 863 | 1123 | 278 |
| WT-200LC-K | 540 | 1595 | 1200 | 1358 | 278 |
| WT-250LC-K | 540 | 1945 | 1500 | 1700 | 278 |
| WT-300LC-K | 620 | 1620 | 1150 | 1366 | 286 |

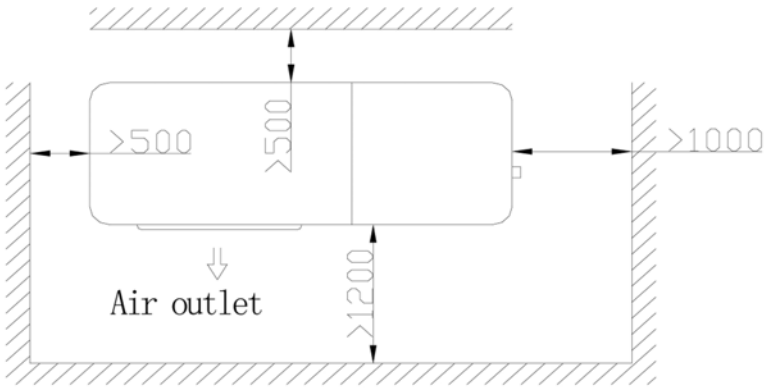
| inlet | cycle inlet, outlet | outlet | drain |
|---|---|---|---|
| G1/2 | G3/4 | G1/2 | G1/2 |
| DN15 | DN20 | DN15 | DN15 |

## .4 Installation Clearance Data

### 1.4.1 Installation of Master Unit of Water Heater

1. The installation requirement of master unit is the same as that of outdoor unit. It can be installed on the wall, rooftop, balcony or floor. Air outlet should be kept away from the upwind direction.

2. The distance between master unit and each wall around or other shelters shall not be too small. The following requirements shall be met.（Unit: mm）

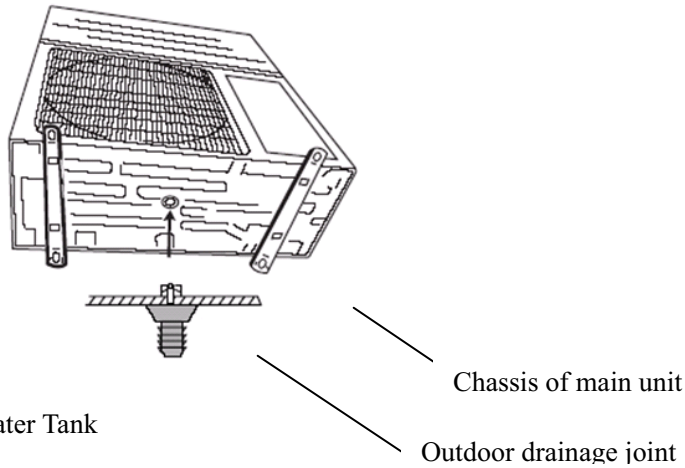



3. If canopy is installed, radiation and heat absorption of heat exchanger should not be hindered.

4. Master unit should be installed vertically at firm place and fixed with foot bolts. If vibration is great, anti-shock rubber mat should be added.

5. Confirm sealing connection between drainage pipe and water outlet of master unit, as shown in

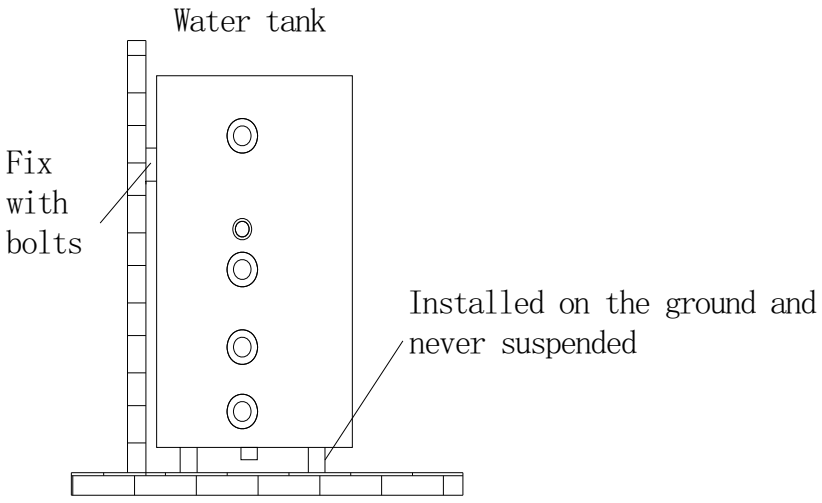
the following figure.




1.4.2 Installation of Insulated Water Tank

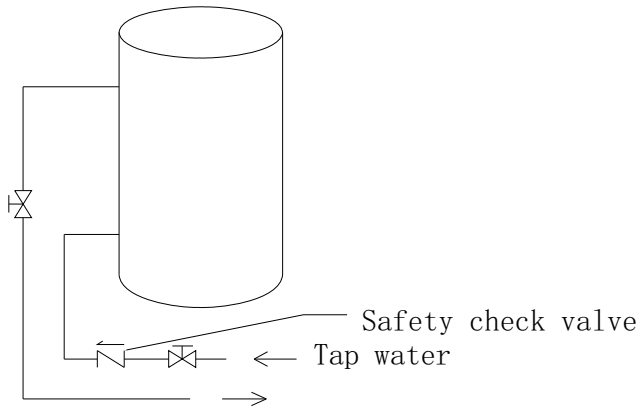
1. The insulated water tank should be installed and kept levelly within 5m and vertically within 3m from the master unit. It can be installed on the balcony, rooftop and floor or in the room.

2. Standing water tank must be installed vertically with the bottom on the ground, never suspended. Installation place must be firm enough and the water tank should be fixed on the wall with bolts to avoid vibration, as shown in the following figure. Weight capacity of water tank during installation should also be considered.




3. There should be water pipe, hot water joint and floor drain near the water tank in favor of water replenishment, hot water supply and drainage of water tank.

4. Connection of inlet/outlet waterway: Connect the safety check valve attached with the unit (→ points at insulated water tank) with the water inlet of water tank with PPR pipe according to the following figure, sealing with sealed tape. The other end of the safety check valve should connect with tap water joint. Connect the hot water pipe and water outlet of water tank with PPR pipe.




Note: For safe use of water, water outlet/inlet of water tank must connect with a certain length of PPR pipe ,L ≥70×R2（cm，R is inside radius of the pipe）. Moreover, heat preservation should be conducted and metal pipe can not be used. For the first use, water tank must be full of water before the power is on.

1.4.3 Connection of Waterway System

1. If connection between water tank and main unit should be through the wall, drill a φ70mm-hole for pass of circulating water pipe. It is unnecessary if the hole is not needed.

2. Preparation of pipelines: Circulating water outlet/inlet pipe must be hot water pipe, PPR pipe with nominal out diameter of dn25 and S2.5 series (wall thickness of 4.2mm) being recommended. Cooling water inlet pipe and hot water outlet pipe of water tank should also be hot water pipe, PPR pipe with nominal out diameter of dn20 and S2.5 series (wall thickness of 3.4mm) being recommended. If other insulated pipes are adopted, refer to the above dimensions for outer diameter and wall thickness.

3. Installation of circulating water inlet/outlet pipes: Connect the water inlet of master unit with circulating outlet of water tank and water outlet of main unit with circulating inlet of water tank. The manual discharge valve A attached with the unit must be installed vertically and downwards at water inlet of main unit. The other manual discharge valve B attached with the unit must be installed vertically and upwards next to circulating inlet of water tank. If allowed, valve B should be at the place where it is easy to be operated by the users.

4. Installation of water inlet/outlet pipes of water tank: Safety check valve (→ on the valve body points at water tank), filter and cut-off valve must be installed for water inlet pipe according to the installation sketch of unit. At least a cut-off valve is needed for the water outlet pipe.

5. Installation of drainage pipe: Connect a piece of PPR pipe with drainage outlet to floor drain. A cut-off valve must be installed in the middle of the drainage pipe and at the place where it is easy to be operated by the users.

6. (1) Passing through the wall for connection between master unit and water tank: Wrap the circulating water pipe with insulated cotton. Cover the temperature sensor with spool. Lead them together with the earthing wire through the wall pipe after tied by plastic tape. Put protective

sleeves on both sides of the duct.

（2）Not passing through the wall for connection between master unit and water tank: Wrap the circulating water pipe with insulated cotton. Cover the temperature sensor with spool. Tie them together with the earthing wire by plastic tape.

7. Refer to Installation Sketch of Unit for details.

## 2 ELECTRIC WIRING WORK

### 2.1 Wiring Principle

The power cord should be firstly connected with dynamic power terminal in electric box and then connected with relevant power terminals of outdoor unit and electric heater. Never mistake the connection to avoid damage to electric elements. If the units are under protection condition, check out leakage causes to clear the fault and then open the electric box without power supply to reset leakage protector. If leakage protector trips off again, stop the unit and ask professionals for help. Never check or repair it by yourself to avoid safety accident. Green mark is normal, while red mark means conglutination between contacts, in which case, it should be replaced after cutting off its power.

General principles:

Wires, equipment and connectors supplied for use on the site must be in compliance with provisions of regulations and engineering requirements.

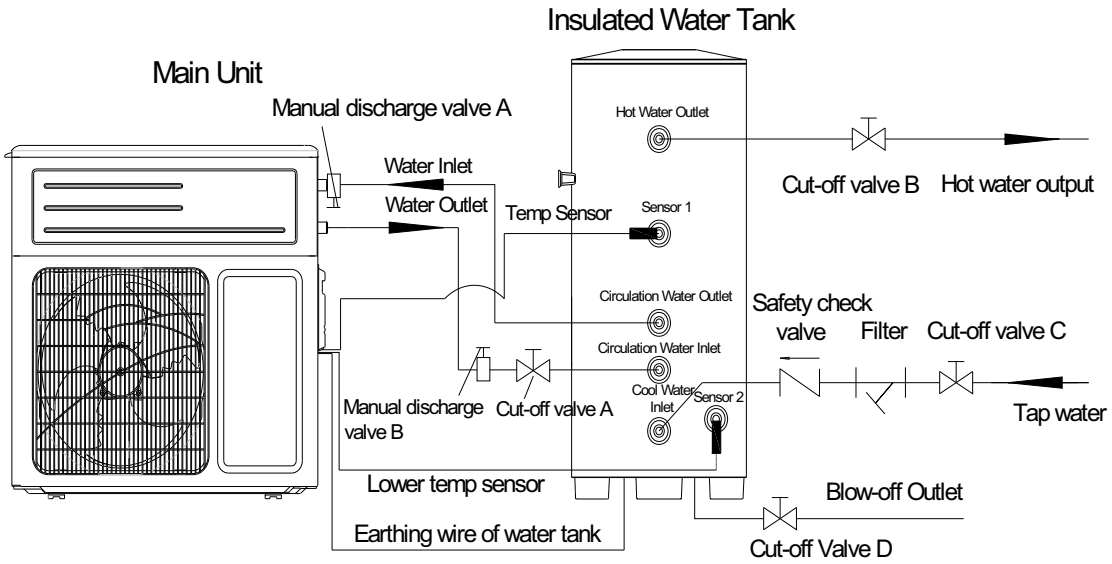
Only electricians with qualification are allowed to perform wire connection on the site.

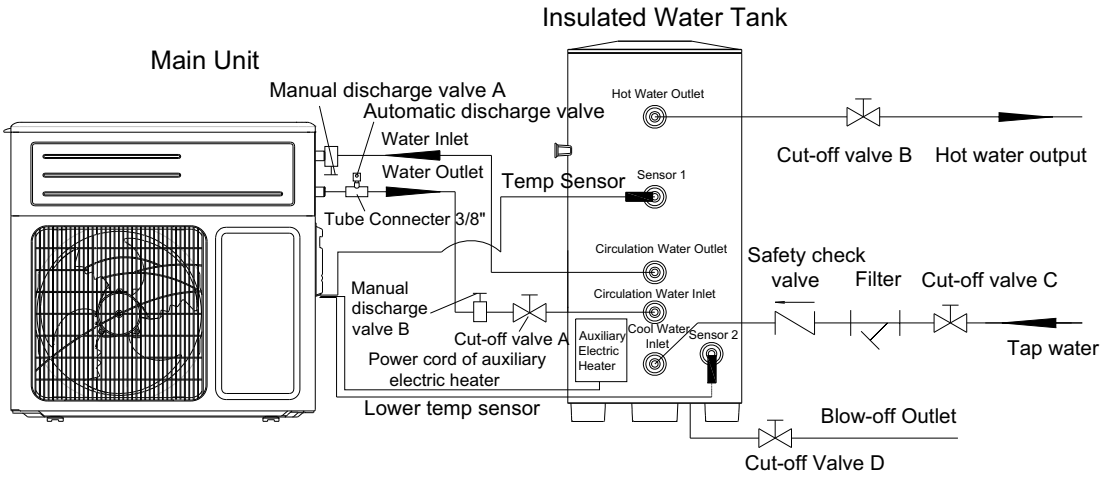
Before connection work is started, the power supply must be cut off.

Installer shall be responsible for any damage due to incorrect connection of the external circuit of the unit.

Caution --- It is a MUST to use copper wires.

### 2.2 Electric Wiring Design






Joints Dimension

| Description | Joint pipe thread |
|---|---|
| Circulating water inlet/outlet of main unit | G3/4 |
| Hot water inlet of water tank | G1/2 |
| Circulating water inlet/outlet of water tank | G3/4 |
| Cooling water inlet of water tank | G1/2 |
| Pipe joint | G3/4 |

⚠ Notice:

1. Distance between master unit and insulated water tank should not exceed 5m levelly and 3m vertically. If it is higher, please contact with us. It is recommended that water tank be located lower and master unit higher.

2. Prepare the materials according to the above joint dimension. If cut-off valve is installed outside the room, PPR material is recommended to avoid freeze damage.

3. Waterway pipelines can't be installed until water heater is fixed. Do not let dust and other sundries enter into pipeline system during installation of connection pipes.

4. After connection of all waterway pipelines, perform leakage test firstly. After that, perform heat preservation of waterway system; meanwhile, pay more attention to valves and pipe joints. Ensure enough thickness of insulated cotton. If necessary, install heating device for pipeline to prevent the pipeline from freezing.

5. Hot water supplied from insulated water tank depends on pressure of water tap, so there must be supply of tap water.

6. During using, the cut-off valve of cooling water inlet of water tank should be kept normally on.

2.3 Specification of Power Cord & Air Switch

Layout of Wires

1. Air source heat pump water heater is of I type electric appliance, so reliable earthing measure must be performed on special device by professionals.

2. Leakage switch and air switch with enough capacity must be reserved in the fixed circuit.

3. The power supply must accord with the specifications on the nameplate and special circuit for air conditioner.

4. The line width of power cord should be big enough. Refer to the following table for selection:

5. Install the wires according to national wiring regulations.

6. Don't pull the power wire strongly.

| Model | Power supply | Min. sectional area of power cord （mm2） | | | Capacity of air switch （A） |
|---|---|---|---|---|---|
| | | Live wire | Neutral wire | Earthing wire | |
| DHW-C3.5/A1-K | 220-240V～50Hz | 1.5 | 1.5 | 1.5 | 16 |
| DHW-C5.0/A1-K | 220-240V～50Hz | 1.5 | 1.5 | 1.5 | 16 |
| DHW-C7.2/A1-K | 220-240V～50Hz | 2.5 | 2.5 | 2.5 | 20 |
| DHW-C3.8/NbA-K | 220-240V～50Hz | 1.5 | 1.5 | 1.5 | 16 |
| DHW-C5.0/NbA-K | 220-240V～50Hz | 2.5 | 2.5 | 2.5 | 20 |

Notice:

1. The power cord must be copper core and working temperature should not exceed specified value.

2. If the power cord is higher than 15m, please enlarge its sectional area to avoid overload.

3. Specification of power cord was selected when BV single-core wire (2-4 pieces) through plastic pipe is laid at ambient temperature of 40℃ and temperature of D type air switch is 40℃.

4. If there is any change of actual condition of installation, please change the specification of power cord and air switch supplied by us.

Electric Wiring and Connection

1. Unscrew the screws fixing terminal box cover on right side plate of master unit to open the terminal box cover. External wiring diagram is as below:

2. Connect one end of earthing wire attached with the master unit with the earthing screw at the bottom of water tank and the other end with the earthing screw in the terminal box at the side of main unit.

3. There is a piece of power cord with leakage protective function attached with the unit. One end of it should be connected with terminal board of master unit, blue with N, brown with L and yellow green wire earthed. And the other end (with leakage module) should be connected with the air switch equipped by the user. Pay more attention to difference between live and neutral wires,

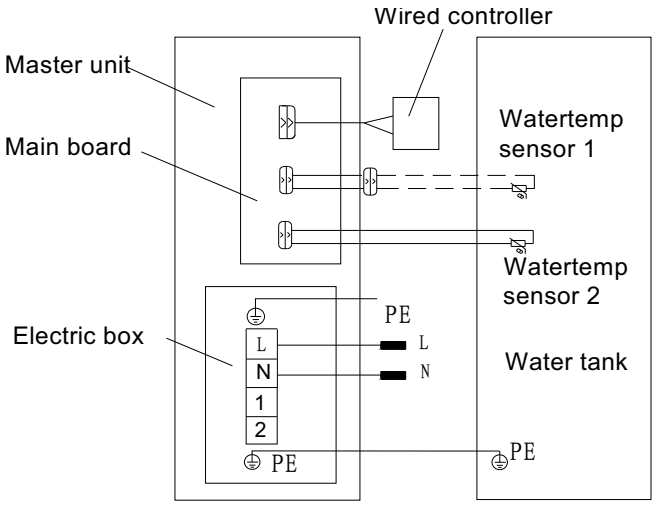
brown with output live wire and blue wire with output neutral wire of air switch. The end with leakage module can not be installed in the bathroom, kitchen, balcony and other wet places.

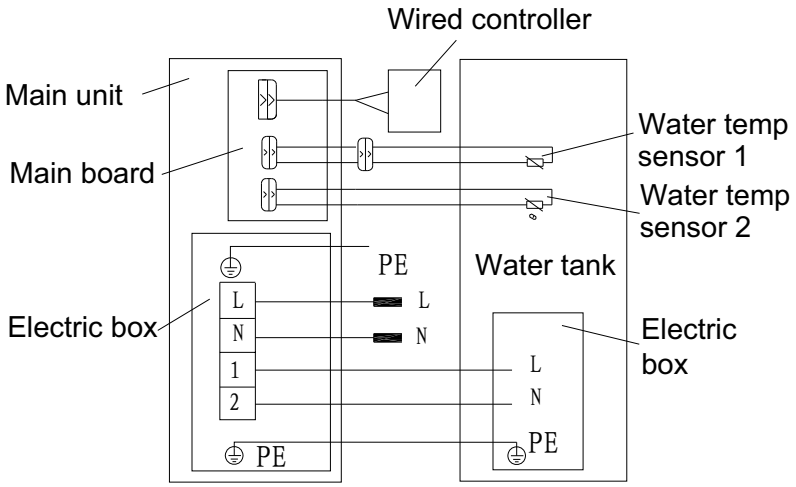
4. Coat the water temperature sensor led out by the master unit with heat-conducting silica gel, and then insert it into the temp sensing joint 2 at the bottom of water tank. Connect the temperature sensor attached in the middle of water tank with the red joint lead out by terminal box at the side of master unit and then put them in the terminal box.

5. Fix the heavy-current wire with clamp and close the terminal box cover.

6. Install and fix the wired controller and then connect the communication wire between wired controller and main unit.

7. Separately lay the heavy and light current wires.




External wiring diagram of water tank with auxiliary electric heater

# MAINTENANCE

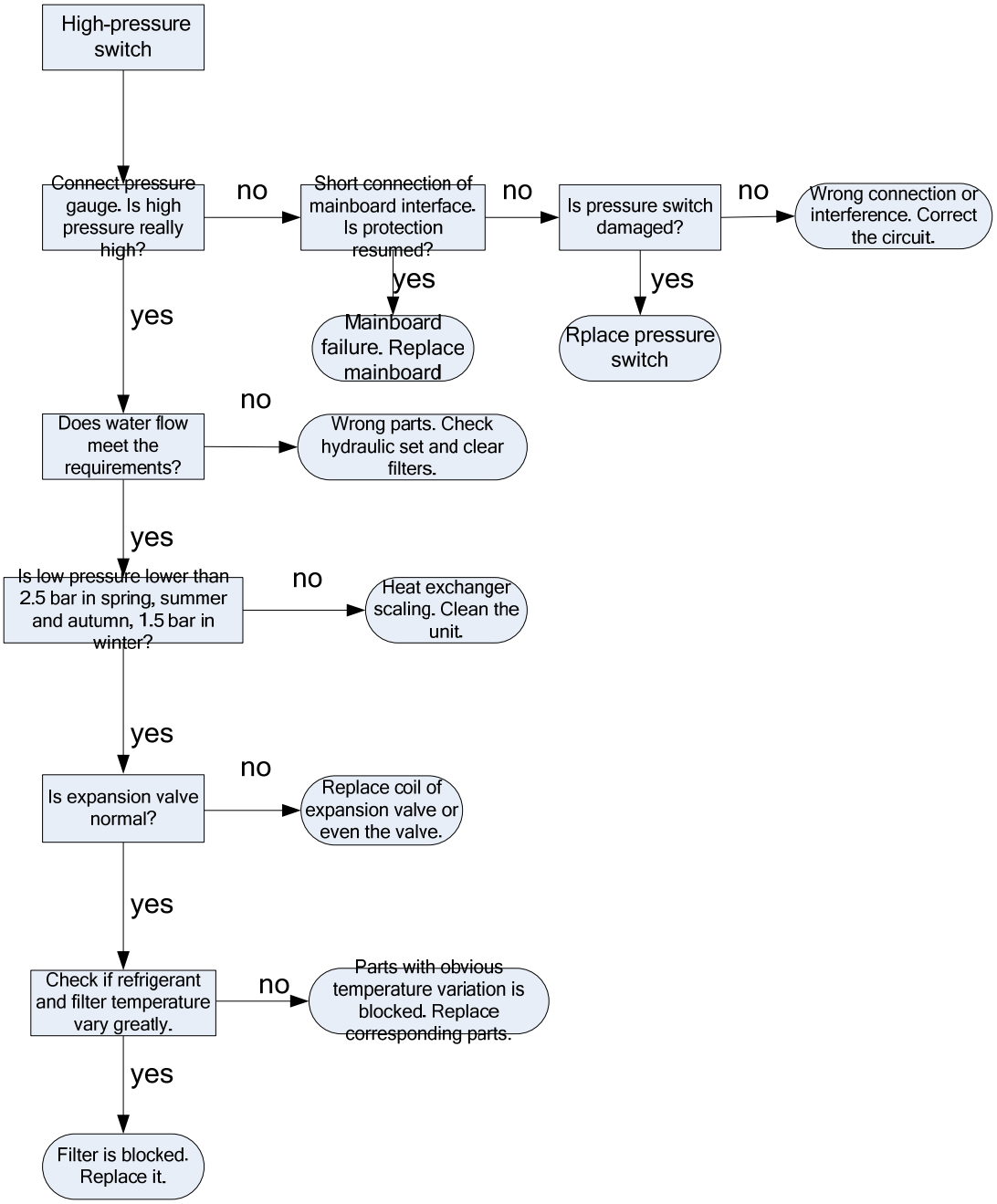
# UNITS MAINTENANCE

## 1 ERROR CODE LIST

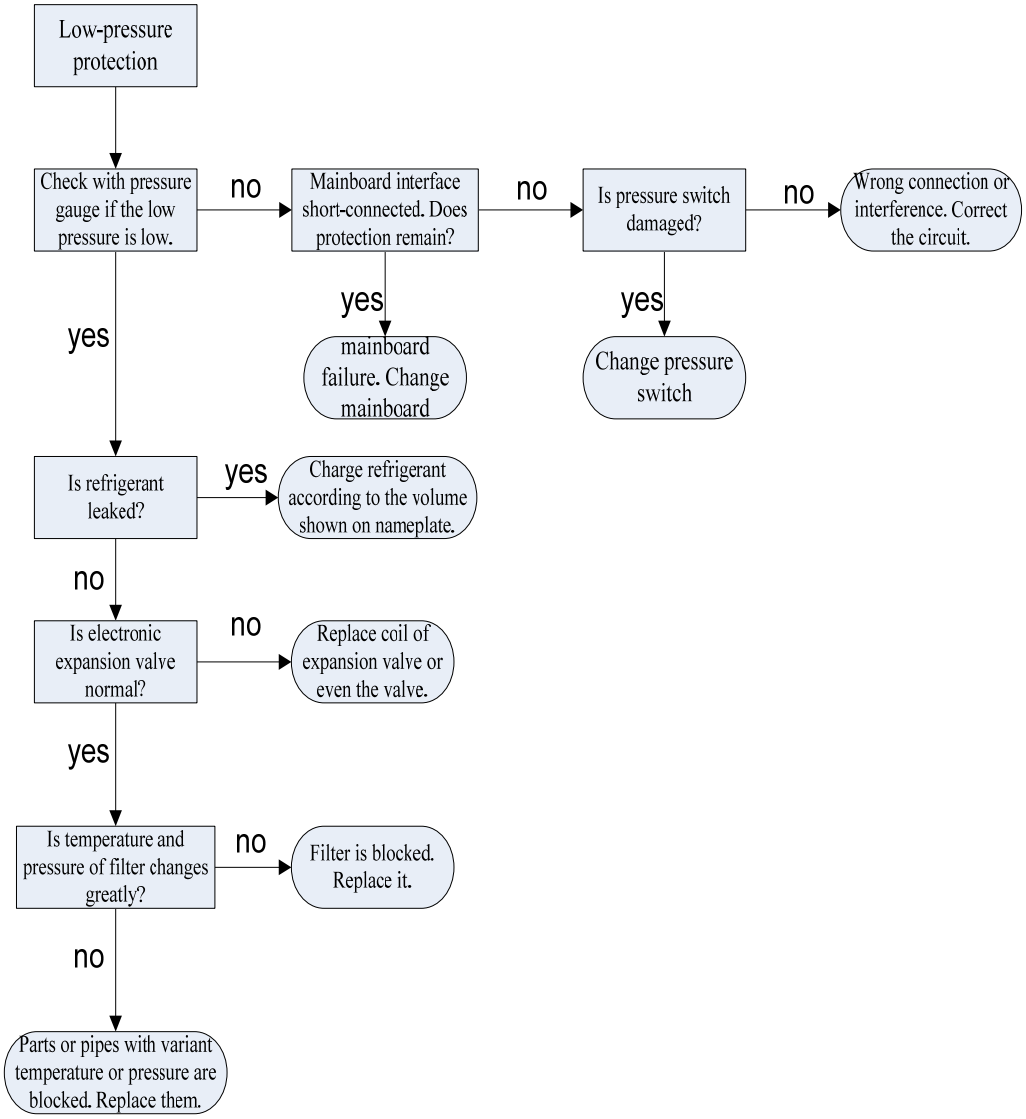
| Code Indication | Error Name | Source of Error Signal | Control Description |
|---|---|---|---|
| E1 | Comp high-pressure protection | High-pressure switch | Press ON/OFF key to clear it |
| E3 | Comp low-pressure protection | Low-pressure switch | Press ON/OFF key to clear it |
| E4 | Discharge protection | Discharge temp. sensor | Press ON/OFF key to clear it |
| E6 | Communication failure | Wired controller and main board communication malfunction | Automatically resume |
| EH | Auxiliary electric heater bonding protection | Anti-bonding detecting element | Press ON/OFF key to clear it |
| d2 | Automatic antifeezing protection | Ambient temp. sensor & water temp. sensor | Press ON/OFF key to clear |
| F3 | Outdoor ambient temp sensor failure | Outdoor ambient temp. sensor | Automatically resume |
| F4 | Discharge temp. sensor failure | Discharge temp. sensor | Automatically resume |
| F6 | Outdoor heat exchanger pipe temp. sensor failure | Outdoor heat exchanger pipe temp. sensor | Automatically resume |
| Fd | Intake temp. sensor failure | Intake temp. sensor | Automatically resume |
| FL | Water tank water temp. sensor failure | Water tank water temp. sensor | Automatically resume |
| FE | Water temp sensor connected with water tank failure | Water temp sensor connected with water tank | Automatically resume |
| L7 | Water-pressure switch protection | Water-pressure switch | Press ON/OFF key to clear |

## 2 FLOW CHART OF TROUBLESHOOTING

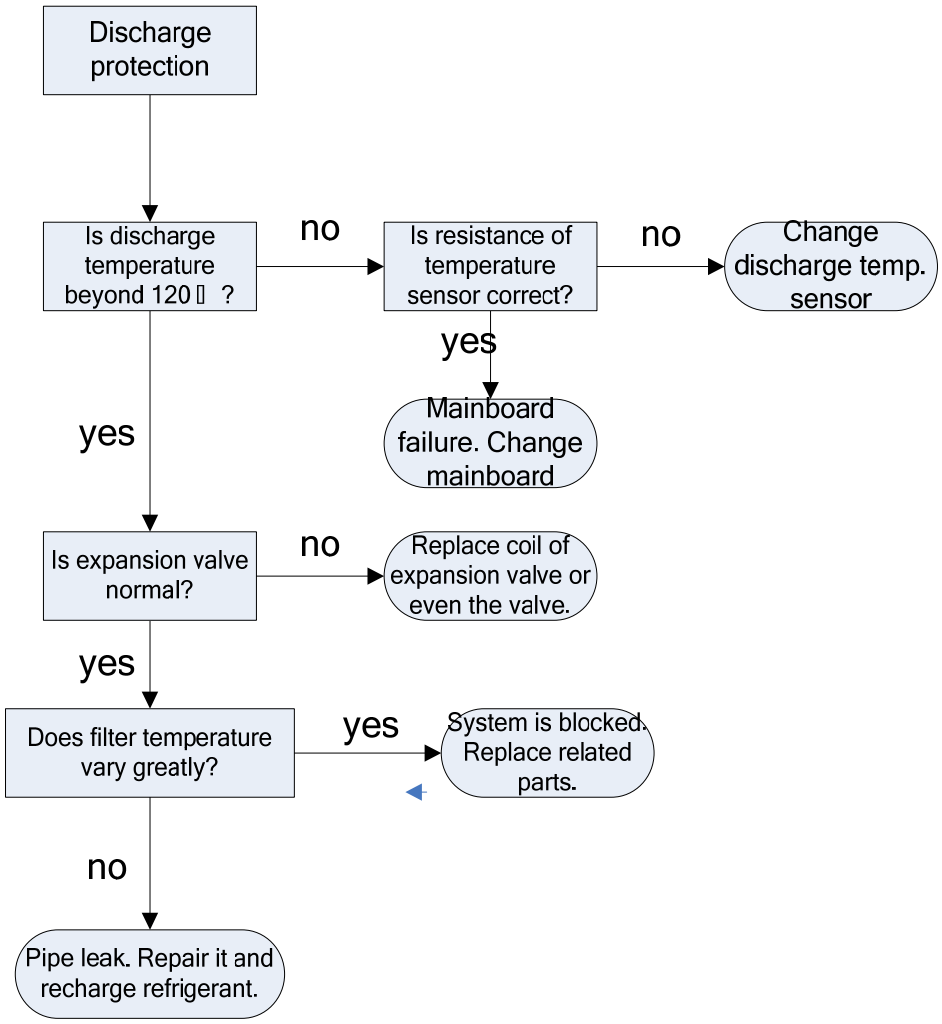
High-pressure protection flow chart of trouble shooting：（E1）


High-pressure switch
Connect pressure gauge. Is high pressure really high?
no
Short connection of mainboard interface. Is protection resumed?
no
Is pressure switch damaged?
no
Wrong connection or interference. Correct the circuit.
yes
Mainboard failure. Replace mainboard
yes
Rplace pressure switch
yes
Does water flow meet the requirements?
no
Wrong parts. Check hydraulic set and clear filters.
yes
Is low pressure lower than 2.5 bar in spring, summer and autumn, 1.5 bar in winter?
no
Heat exchanger scaling. Clean the unit.
yes
Is expansion valve normal?
no
Replace coil of expansion valve or even the valve.
yes
Check if refrigerant and filter temperature vary greatly.
no
Parts with obvious temperature variation is blocked. Replace corresponding parts.
yes
Filter is blocked. Replace it.

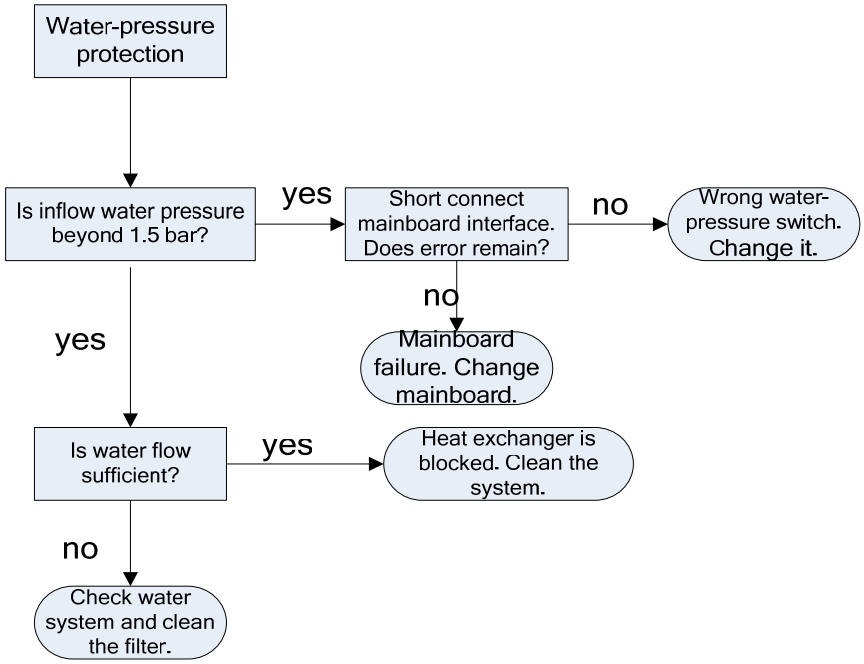
Low-pressure protection flow chart of trouble shooting：（E3）



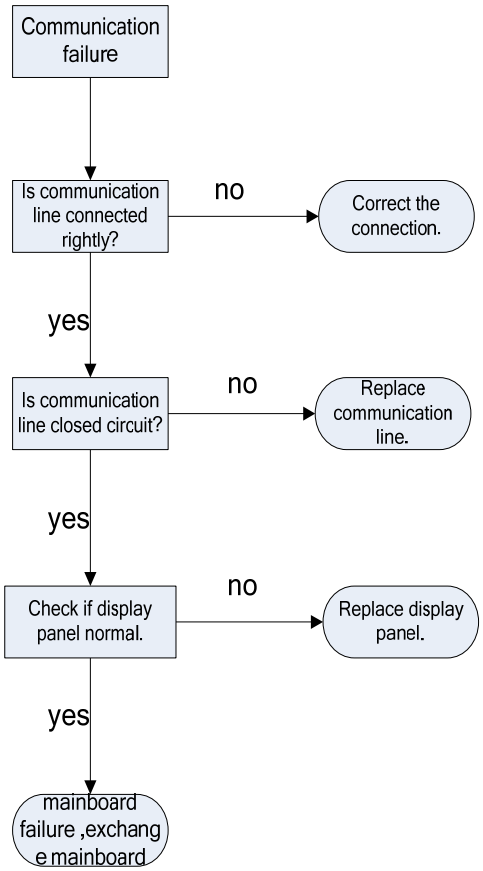
Discharge protection flow chart of trouble shooting：（E4）



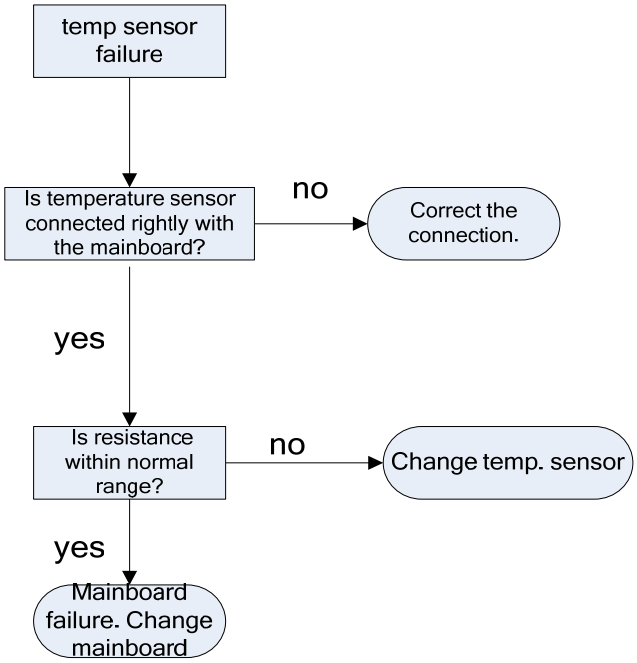
Water-pressure protection flow chart of trouble shooting：（L7）




Communication failure flow chart of trouble shooting：（E6）

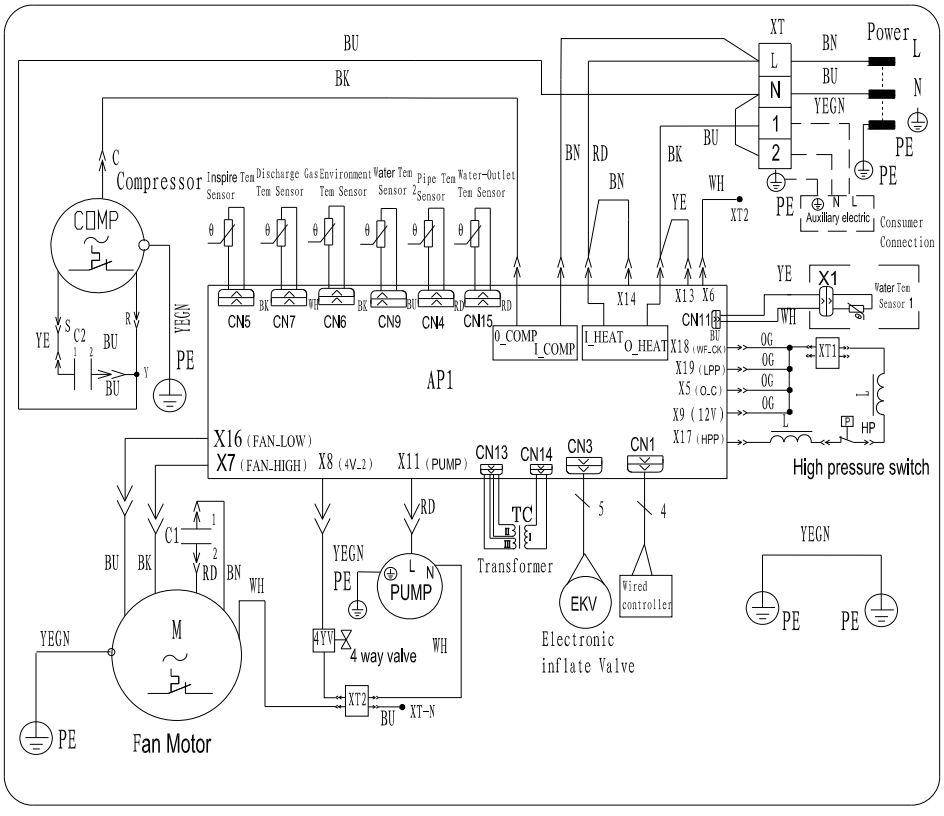


Temperature sensor failure flow chart of trouble shooting：

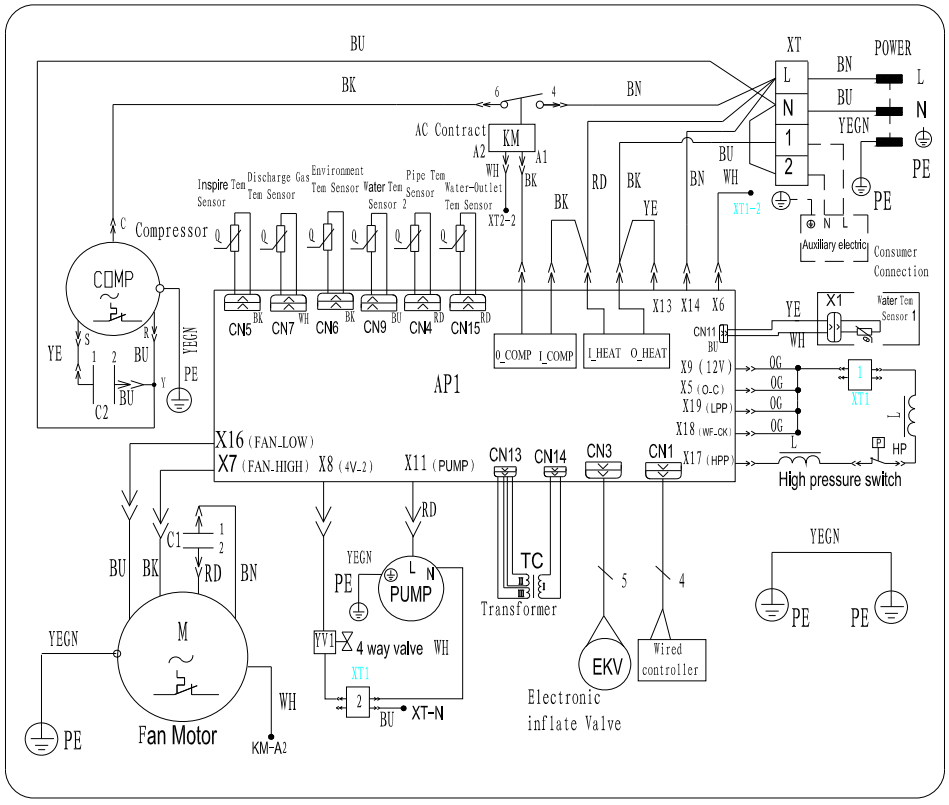



## 3 WIRING DIADRAM

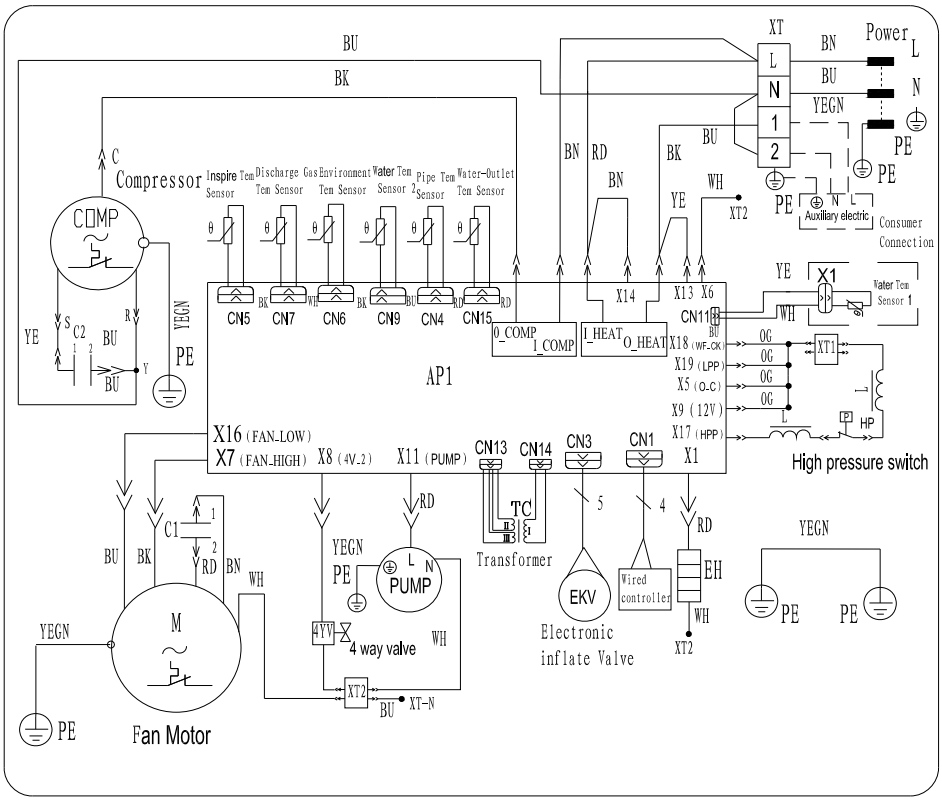
1) Model: DHW-C3.5/A1-K DHW-C5.0/A1-K



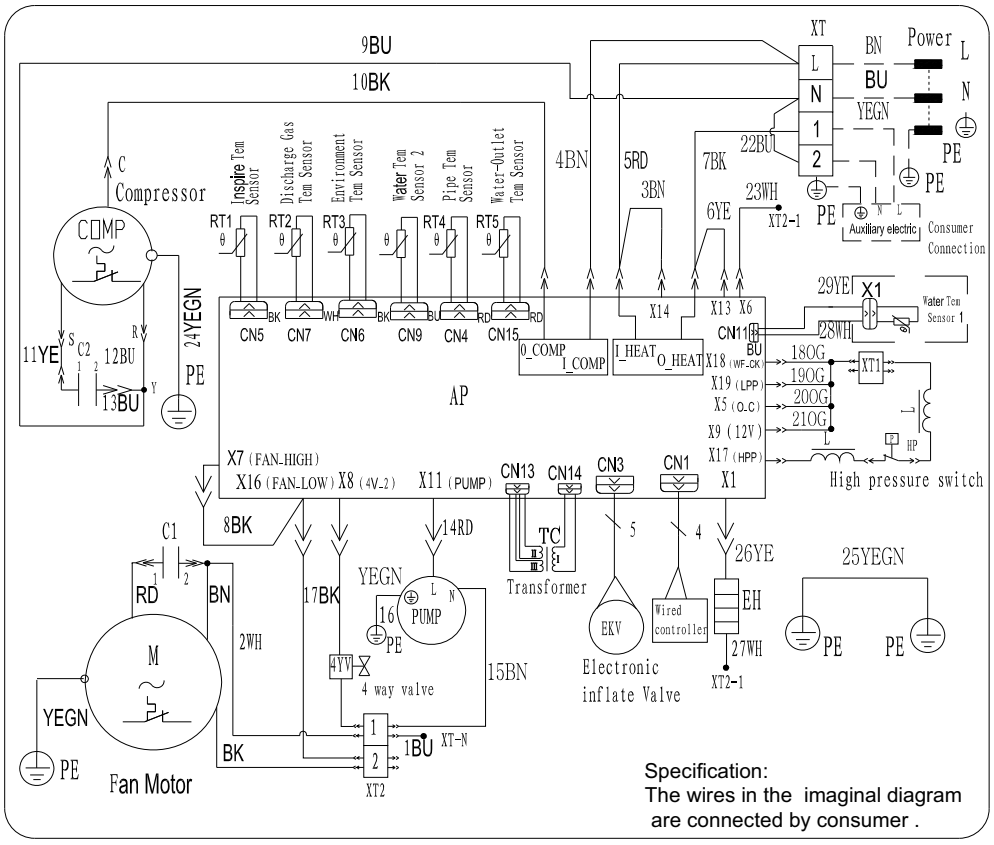
2) Model: DHW-C7.2/A1-K



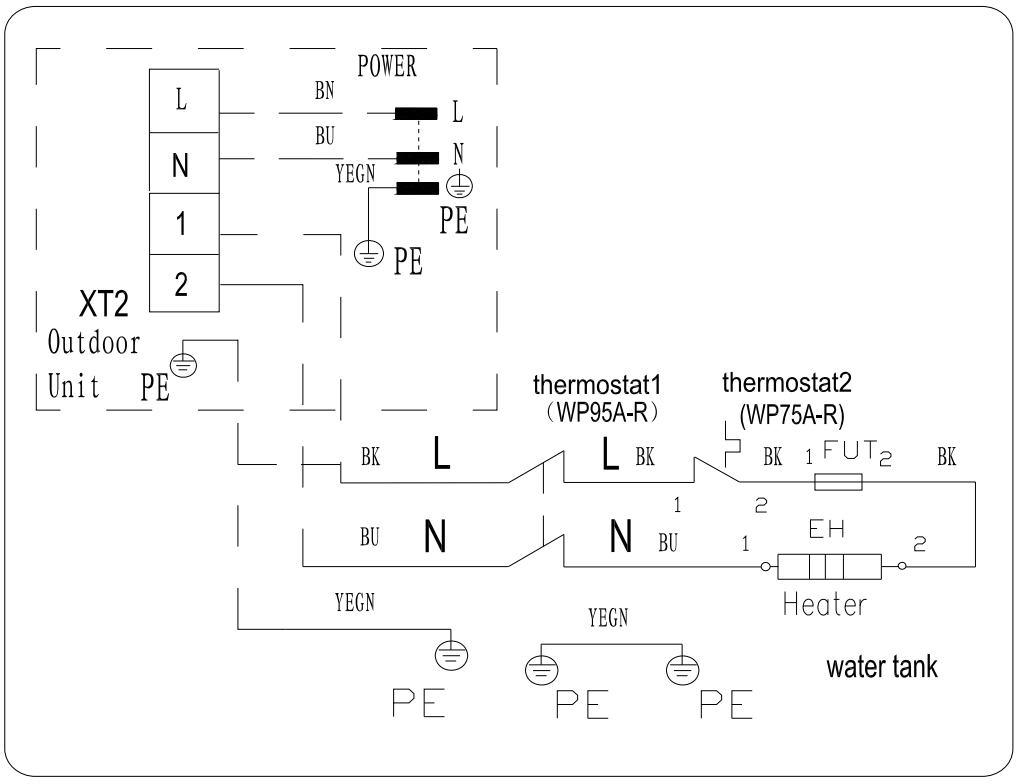

3) Model: DHW-C3.8/NbA-K



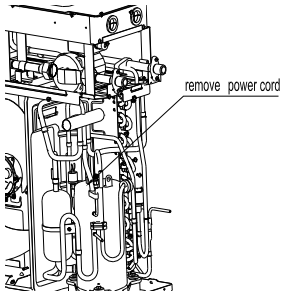
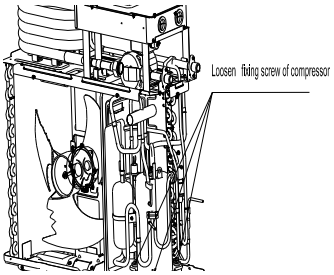
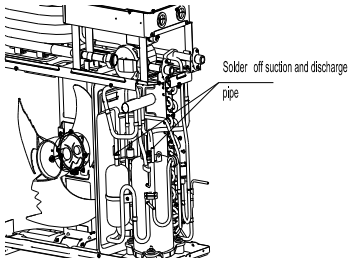
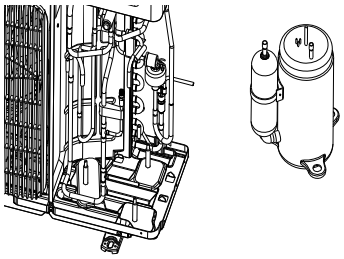
4) Model: DHW-C5.0/NbA-K

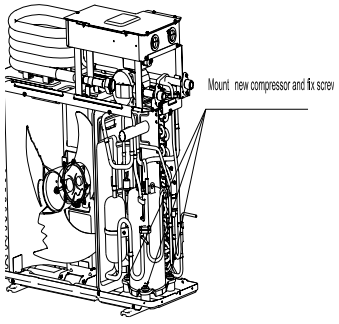
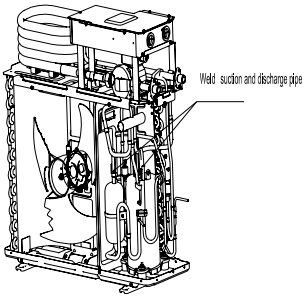
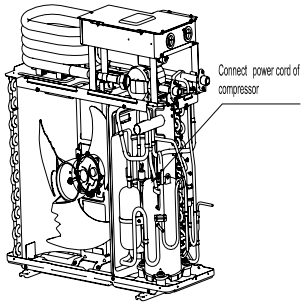
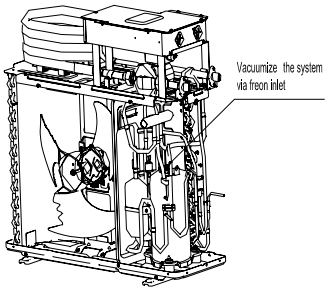


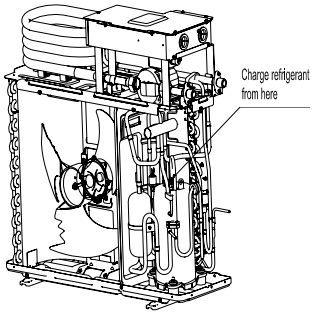

5) Model: WT-150LC-K、WT-200LC-K、WT-250LC-K、WT-300LC-K



# 4 DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

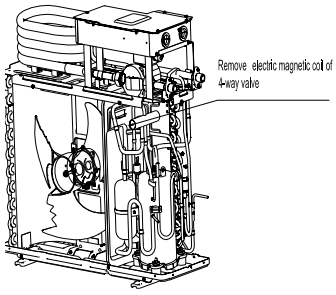
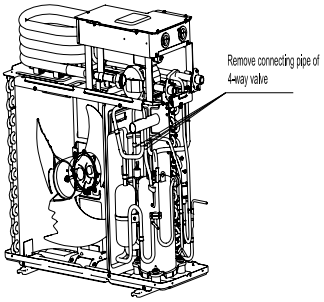
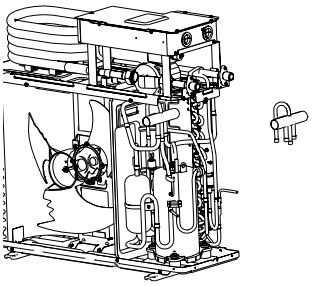
| Disassembly and Assembly of Compressor | | |
|---|---|---|
| Remark: Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of the compressor. | | |
| Step | Illustration | Handling Instruction |
| 1． Disconnect the power cord |  | ●Unscrew the retaining screw of power cord with screwdriver.<br>●Unplug the power cord. |
| 2. Remove fixing screw of compressor |  | ●Remove fixing screw of compressor with screwdriver. |
| 3． Disconnect the suction and discharge pipe |  | ● Solder the suction and discharge pipe of the compressor before removing them.<br>● During welding, charge nitrogen of 0.5±0.1kgf/cm$^2$ (relative pressure).<br>●Do not burn the other parts during soldering. |
| 4．Remove the compressor from the chassis |   | ●Remove the compressor from the chassis. |

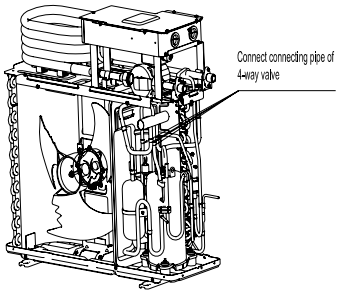
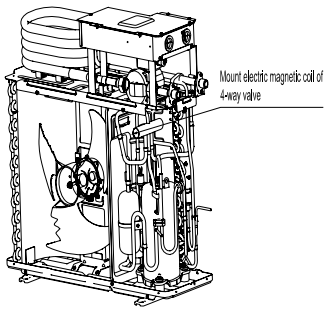
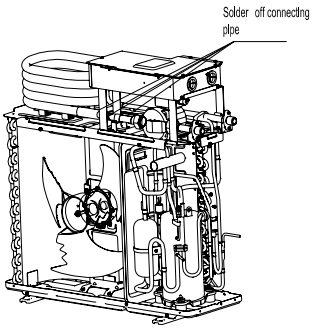
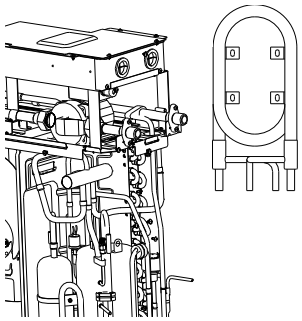
| | | |
|---|---|---|
| 5. Fix the new compressor on the chassis |  | ● Put a new compressor in the corresponding position.<br>● Tighten the fixing screw of compressor.<br>● Do not install the compressor up-side-down. |
| 6. Connect the air inlet and outlet to the pipeline |  | ●Solder the connectin pipe of the compressor to make then connected。<br>●During welding, charge nitrogen of 0.5±0.1kgf/cm$^2$ (relative pressure).<br>●Do not burn the other parts during soldering. |
| 7. Connect the power cord of compresso |  | ● Perform leak test for the welding spot.<br>● Mount the power cord.<br>●Tighten the fixing screw of the power cord |
| 8. Vacuumize it via freon inlet |  | ●Vacuumize the system via freon inlet. |

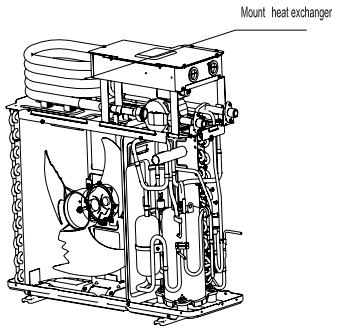
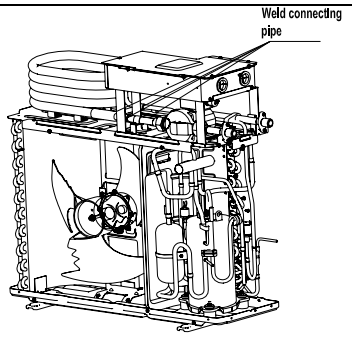
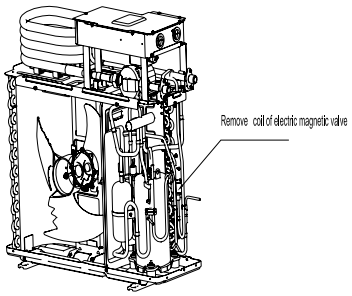
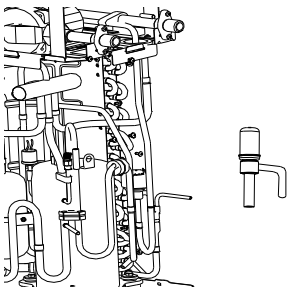
| | | |
|---|---|---|
| 9. Recharge refrigerant via freon inlet. |  | ● Recharge refrigerant via freon inlet.<br>● The refrigerant volume should accord with the nameplate. |

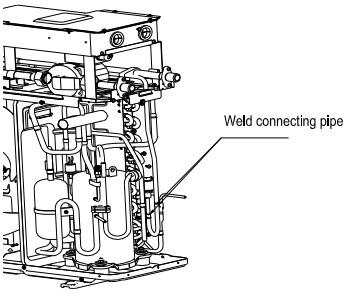
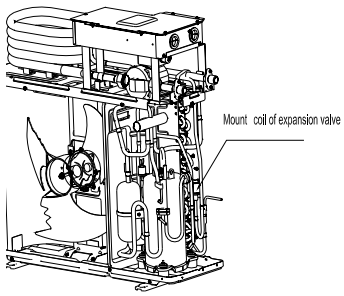
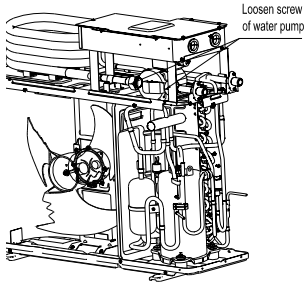
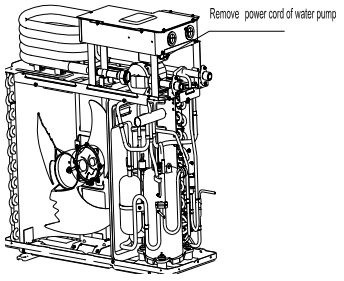
Disassembly and Assembly of 4-way Valve

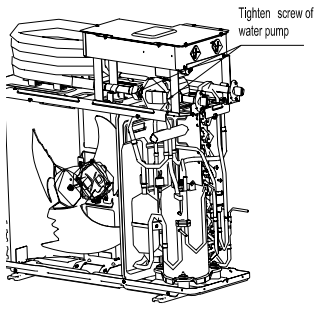
Remark: Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of the4-way valve.

| Step | Illustration | Handling Instruction |
|---|---|---|
| 1. Disconnect the electric magnetic valve coil of 4-way valve |  | ● Loosen the screw fixing 4-way valve coil. |
| 2. Disconnect the connnecting pipe of 4-way valve |  | ● It is necessary to record the direction of the 4-way valve before removing it.<br>● Wrap the valve with wet cloth in case of burnt gliding block and entering of water.<br>● Heat the pipe and remove the electronic expansion valve.<br>● During welding, charge nitrogen of 0.5±0.1kgf/cm$^2$ (relative pressure).<br>●Do not burn the other parts during soldering. |
| 3. Remove the 4-way valve |  | ● Remove the 4-way valve. |

| | | |
|---|---|---|
| 4. Connet the pipe of 4-way valve with system pipeline. Weld them. |  | ●Wrap the valve with wet cloth in case of burnt gliding block and entering of water.<br>● Weld the pipeline.<br>● During welding, charge nitrogen of 0.5±0.1kgf/cm$^2$ (relative pressure).<br>● Do not burn the other parts during soldering. |
| 5. Install electric magnetic coil of 4-way valve. |  | ●Perform leak test for the welding spot.<br>● Tighten the fixing screw. |
| Disassembly and Assembly of Heat Exchanger | | |
| Remark: Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of the heat exchanger. | | |
| Step | Illustration | Handling Instruction |
| 1. Solder off the heat exchnager |  | ● Wrap the inflow pipe and outflow pipe with wet cloth.<br>● During welding, charge nitrogen of 0.5±0.1kgf/cm$^2$ (relative pressure). |
| 2. Remove the heat exchanger |  | ●Remove the heat exchanger carefully. Avoid hiting other pipe or parts. |

| | | |
|---|---|---|
| 3．Mount the heat exchanger |  | ● Put the heat exchanger in the specific position. Match the pipes corerctly. Avoid hiting other pipe or parts. |
| 4.Weld heat exchanger |  | ●Connect the pipe of heat exchanger. Wrap the pipe with wet cloth and weld them.<br>● During welding, charge nitrogen of 0.5±0.1kgf/cm$^2$ (relative pressure).<br>● Perform leak test for the welding spot. |
| Disassembly and Assembly of Electronic Expansion Valve | | |
| Remark: Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of the electronic expansion valve. | | |
| Step | Illustration | Handling Instruction |
| 1. Remove the coil of electronic expansion valve. |  | ● Turn the coil clockwise or counter clockwise so that the boss breaks away from the dent. Upturn to remove the coil. |
| 2. Disassemble the electronic expansion valve |  | ● Avoid burning other pipes during welding.<br>● Remove the electronic expansion valve carefully. Avoid hiting other pipes and parts.<br>● During welding, charge nitrogen of 0.5±0.1kgf/cm$^2$ (relative pressure). |

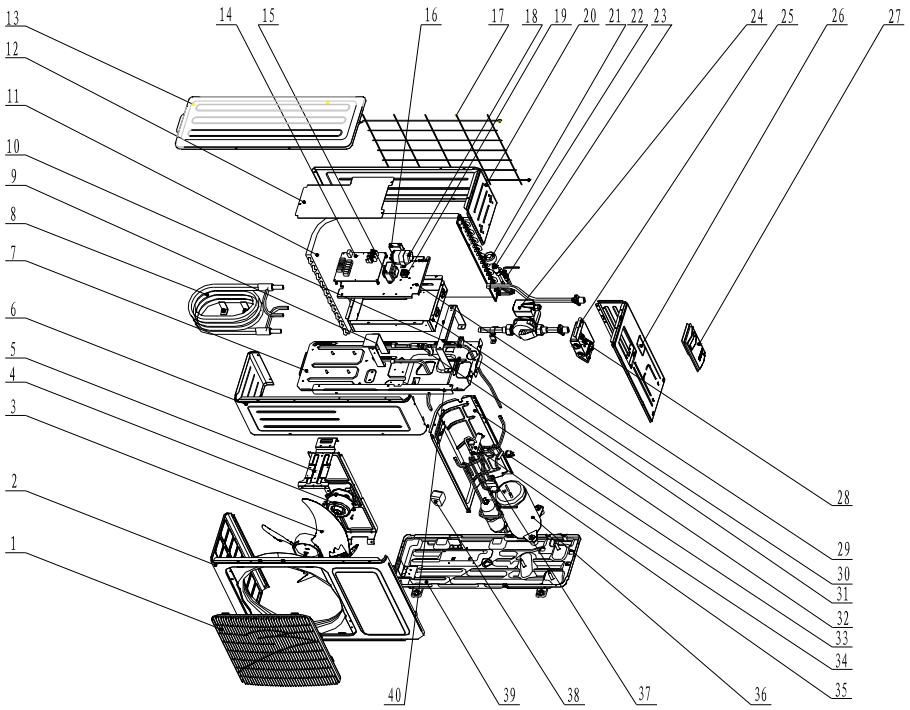
| | | |
|---|---|---|
| 3. Wled a new electronic expansion valve. |  | ● The model of new electronic expansion valve should be the same as that of the origianl one.<br>●Wrap the valve with wet cloth in case of burnt gliding block and entering of water.<br>●During welding, charge nitrogen of 0.5±0.1kgf/cm$^2$ (relative pressure).<br>●Perform leak test for the welding spot. |
| 4. Mount the coil of the electronic expansion valve. |  | ● After welding the connecting pipe, mount the coil.<br>● If plug of electronic expansion valve coil has been disconnected, it is necessary to cut off the power and reenergize it after it is connected. |
| Disassembly and Assembly of Water Pump | | |
| Remarks: It is a must to cut off the power and discharge the water before disassembling the water pump. | | |
| Step | Illustration | Handling Instruction |
| 1. Remove the water pump |  | ● Disconnect connecting pipe of master unit.<br>● Remove top cover and front side panel.<br>● Remove the electric box and its parts.<br>●Screw off the connector on both sides of water pump. |
| 2. Remove the power cord of water pump |  | ● Open the electric box cover.<br>● Remove power cord of water pump. |

| | | |
|---|---|---|
| 3． Mount a new water pump. |  | ●Connect water pump and ensure it is sealed.<br>●Connect power cord of water pump.<br>●Mount electric box and electric box cover.<br>● Mount back side panel and top cover.<br>●Connect water pipe. |

## 5. Exploded Views

DHW-C3.5/A1-K、DHW-C5.0/A1-K

Exploded views:



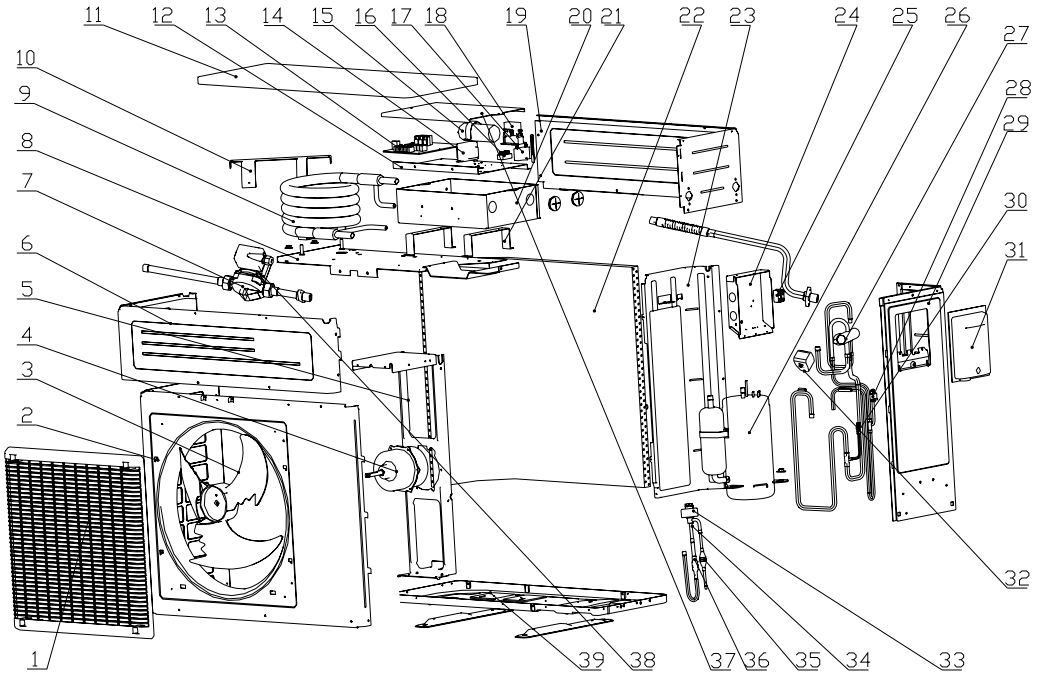

Parts List

| No. | Name of part | Part code | Quantity |
|---|---|---|---|
| 1 | panel grill | 22413431 | 1 |
| 2 | panel | 015330124① | 1 |
| | | 01533012② | |
| 3 | Axial Flow Fan | 10333004 | 1 |
| 4 | fan motor | 150130674 | 1 |
| 5 | motor support | 01703102① | 1 |
| | | 0170310201② | |
| 6 | front baffle | 01352803P | 1 |
| 7 | lower panel Sub-Assy | 02222803 | 1 |
| 8 | condenser | 01152241① | 1 |
| | | 01139406② | |
| 9 | support rack | 01892819 | 1 |

| | | | |
|---|---|---|---|
| 10 | support rack | 01892816 | 1 |
| 11 | condenser Sub-Assy | 01133022① | 1 |
| | | 011330632② | |
| 12 | electrical box cover | 01262825 | 1 |
| 13 | Top Cover | 01253001 | 1 |
| 14 | mainboard | 30222030 | 1 |
| 15 | transformer of power supply | 4311023701 | 1 |
| 16 | capacitance | 33010026 | 1 |
| 17 | grille nets | 01473014 | 1 |
| 18 | capacitance | 33010743 | 1 |
| 19 | Terminal Board | 42011147 | 2 |
| 20 | back baffle | 01352804P | 1 |
| 21 | solenoid coil | 430001089 | 1 |
| 22 | solenoid valve | 07332803 | 1 |
| 23 | strainer | 07211601 | 1 |
| 24 | pump | 43130322 | 1 |
| 25 | Terminal box Sub-Assy | 01392841 | 1 |
| 26 | right Side Plate | 01312802P | 1 |
| 27 | Handle | 26233431 | 1 |
| 28 | Terminal Board | 42010265 | 1 |
| 29 | installation baord of electric parts | 01322815 | 1 |
| 30 | electrical box Sub-Assy | 01392840 | 1 |
| 31 | right fixup Plate | 02222804 | 1 |
| 32 | strainer | 07212403 | 1 |
| 33 | isolation | 012334191 | 1 |
| 34 | High-pressure switch | 4602001001 | 1 |
| 35 | 4-way value | 43000402① | 1 |
| | | 43000403② | |
| 36 | commpressor and other parts | 00202803① | 1 |
| | | 00202801② | |
| 37 | freon inlet(R22) | 06120011 | 1 |
| 38 | solenoid coil | 430004002 | 1 |
| 39 | chassis Sub-Assy | 0119280301P① | 1 |
| | | 01192804P② | |
| 40 | Front fixup Plate | 02222806 | 1 |

Note：① only is part of DHW-C3.5/A1-KModel.
② only is part of DHW-C5.0/A1-KModel.

DHW-C7.2/A1-K
Exploded views:



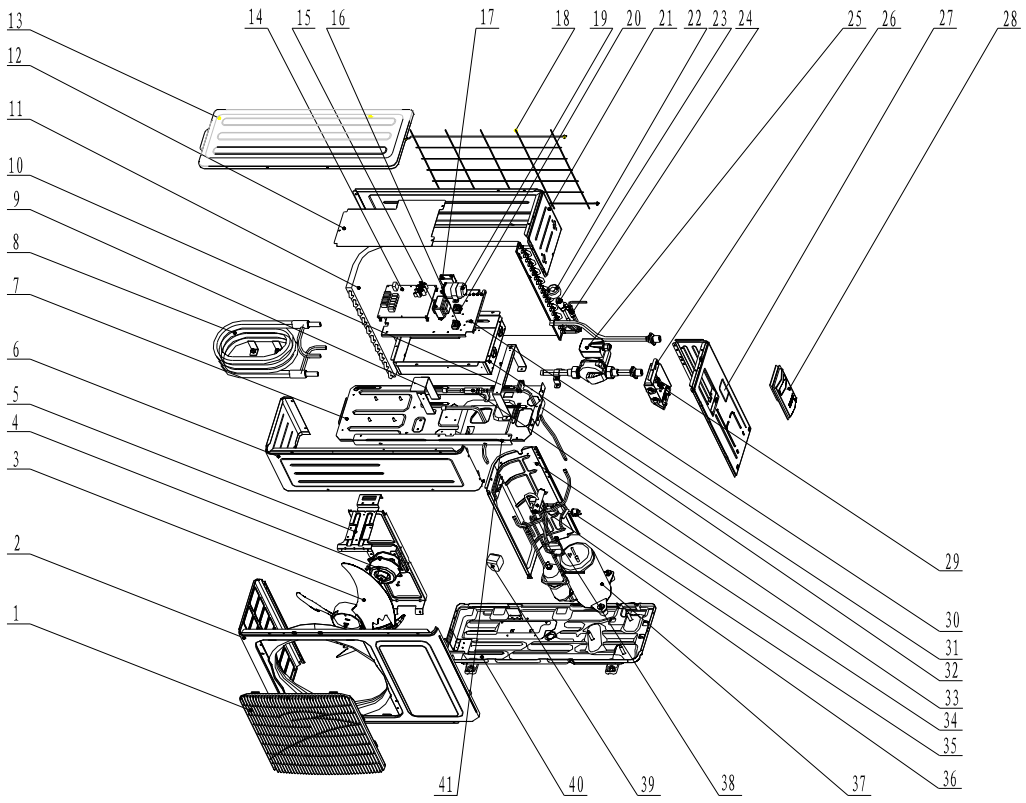

Parts List

| No | Name of part | Part code | Quantity |
|---|---|---|---|
| 1 | panel grill | 22415001 | 1 |
| 2 | panel | 01305015 | 1 |
| 3 | Axial Flow Fan | 10335257 | 1 |
| 4 | fan motor | 15702800 | 1 |
| 5 | motor support | 01705003 | 1 |
| 6 | front baffle | 01352801P | 1 |
| 7 | pump | 43130322 | 1 |
| 8 | support rack Sub-Assy | 01892810P | 1 |
| 9 | condenser | 01152240 | 1 |
| 10 | connect Board | 01342800 | 1 |
| 11 | Top Cover | 01255001 | 1 |
| 12 | installation board of electric parts | 01322805 | 1 |
| 13 | mainboard | 30222030 | 1 |
| 14 | electrical box Sub-Assy | 43110237 | 1 |
| 15 | capacitance | 33000001 | 1 |
| 16 | Terminal Board | 42011103 | 1 |
| 17 | capacitance | 33010010 | 1 |
| 18 | AC contactor | 44010245 | 1 |
| 19 | back baffle | 01352802P | 1 |

| | | | |
|---|---|---|---|
| 20 | electrical box | 01422805 | 1 |
| 21 | electrical box | 01892813 | 2 |
| 22 | condenser Sub-Assy | 01133464 | 1 |
| 23 | isolation Sub-Assy | 01233038 | 1 |
| 24 | Terminal box Sub-Assy | 01422806 | 1 |
| 25 | Terminal Board | 42010265 | 1 |
| 26 | compressor Sub-Assy | 00101156 | 1 |
| 27 | 4way value | 43000403 | 1 |
| 28 | High-pressure switch | 4602001001 | 1 |
| 29 | right Side Plate | 01305013 | 1 |
| 30 | freon inlet(R22) | 06120011 | 1 |
| 31 | Handle | 26235254 | 1 |
| 32 | solenoid coil | 4300040022 | 1 |
| 33 | solenoid coil | 43000109 | 1 |
| 34 | solenoid valve | 07130336 | 1 |
| 35 | strainer | 07211601 | 1 |
| 36 | strainer | 07212001 | 1 |
| 37 | electrical box cover | 01422807 | 1 |
| 38 | capacitor clamp | 01892815 | 1 |
| 39 | chassis Sub-Assy | 01192802P | 1 |

DHW-C3.8/NbA-K DHW-C5.0/NbA-K

Exploded views:

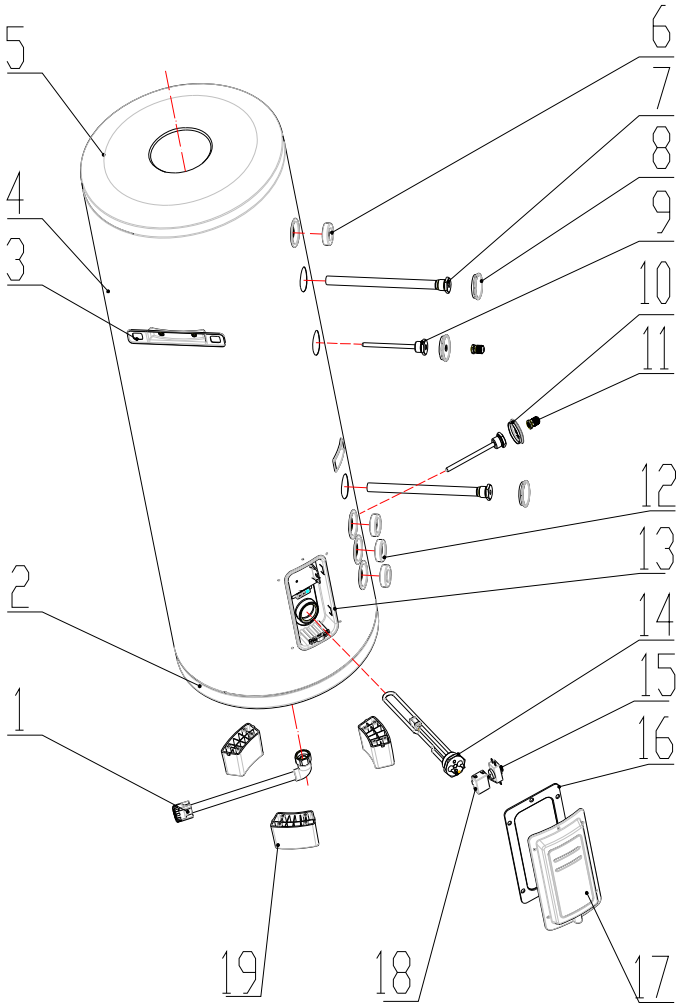


Parts List

| No | Name of part | Part code | Quantity |
|---|---|---|---|
| 1 | panel grill | 22413431 | 1 |
| 2 | panel | 01533012 | 1 |
| 3 | Axial Flow Fan | 10333004 | 1 |
| 4 | fan motor | 150130674① | 1 |
| | | 150130671② | |
| 5 | motor support | 0170310201 | 1 |
| 6 | front baffle | 01352803P | 1 |
| 7 | lower panel Sub-Assy | 02222803 | 1 |
| 8 | condenser | 01139406① | 1 |
| | | 01152805② | |
| 9 | support rack | 01892819 | 1 |
| 10 | support rack | 01892816 | 1 |
| 11 | condenser Sub-Assy | 011330632① | 1 |
| | | 01152806② | |
| 12 | electrical box cover | 01262825 | 1 |
| 13 | Top Cover | 01253001 | 1 |
| 14 | mainboard | 30222062 | 1 |
| 15 | power transformer | 4311023701 | 1 |
| 16 | Terminal Board | 无① | 1 |
| | | 42011103② | |
| 17 | capacitance | 33010026 | 1 |
| 18 | grille nets | 01473014 | 1 |
| 19 | capacitance | 33010743① | 1 |
| | | 33000046② | |
| 20 | Terminal Board | 42011147 | 1 |
| 21 | back baffle | 01352804P | 1 |
| 22 | solenoid coil | 430001089 | 1 |
| 23 | solenoid valve | 07332803 | 1 |
| 24 | strainer | 07211601 | 1 |
| 25 | pump | 43130322 | 1 |
| 26 | Terminal box Sub-Assy | 01392841 | 1 |
| 27 | right Side Plate | 01312802P | 1 |
| 28 | Handle | 26233431 | 1 |
| 29 | Terminal Board | 42010265 | 1 |
| 30 | installation baord of electric parts | 01322815 | 1 |
| 31 | electrical box Sub-Assy | 01392840 | 1 |
| 32 | right fixup Plate | 02222804 | 1 |
| 33 | strainer | 07212403 | 1 |
| 34 | isolation | 012334191 | 1 |
| 35 | High-pressure switch | 4602001519 | 1 |
| 36 | 4-way value | 43000403 | 1 |
| 37 | compressor Sub-Assy | 00202805① | 1 |
| | | 00202806② | |
| 38 | freon inlet(R22) | 06120012 | 1 |
| 39 | solenoid coil | 430004002 | 1 |
| 40 | chassis Sub-Assy | 01192809P | 1 |
| 41 | Front fixup Plate | 02222806 | 1 |

Note：① only is part of DHW-C3.8/NbA-K Model.
② only is part of DHW-C5.0/NbA-K Model.

Water tank：Exploded views:



## Parts List

| No | Name of part | Part Code | | | | | | | | | | Quantity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WT_LC/B1-K | | | | | | WT_LC-K | | | | |
| | | 150 | 200 | 250 | 300 | 350 | 400 | 150 | 200 | 250 | 300 | |
| 1 | Drainage Pipe Sub-Assy | 04362821 | | | | | | | | | | 1 |
| 2 | Bottom Cover Plate | 0126280601P | 01262806P | 01262806P | 0126280602P | 0126280602P | 0126280602P | 0126280601P | 01262806P | 01262806P | 0126280602P | 1 |
| 3 | Fixation Bracket (Outside) | 01802819P | | | | | | | | | | 1 |
| 4 | Body Of Outdoor Unit | 01512819P | 01512818P | 0151281801P | 0151281802P | 0151281803P | 0151281804P | 01512815P | 01512809P | 0151281201P | 01512812P | 1 |
| 5 | Top Cover Plate | 0126280101P | 01262801P | 01262801P | 0126280102P | 0126280102P | 0126280102P | 0126280101P | 01262801P | 01262801P | 0126280102P | 1 |
| 6 | Jacket (supplement water hole ) | 26242801 | | | | | | | | | | 2 |
| 7 | Magnesium Sub-Assy | 04162801 | | | | | | | | | | 2 |
| 8 | Gasket(sensor) | 70412804 | | | | | | | | | | 2 |
| 9 | Temp Sensor Pipe Sub-Assy | 04162802 | | | | | | | | | | 2 |
| 10 | Gasket(sensor) | 70412804 | | | | | | | | | | 1 |
| 11 | Cable-Cross Loop | 765100263 | | | | | | | | | | 1 |
| 12 | Toggle Switch Sheath | 26902810 | | | | | | | | | | 1 |
| 13 | Electric Box Sub-Assy | / | | | | | | 01392844 | | | | 1 |
| 14 | Electric Heater | / | | | | | | 32112800 | | | | 1 |
| 15 | Thermostat | / | | | | | | 45048003 | | | | 1 |
| 16 | Gasket | / | | | | | | 75042802 | | | | 1 |
| 17 | Electric Box Cover | / | | | | | | 26902805 | | | | 1 |
| 18 | Thermostat | / | | | | | | 45048002 | | | | 1 |
| 19 | Water Tank Base | 01892825 | | | | | | | | | | 3 |

# inventor®

Your-conditions